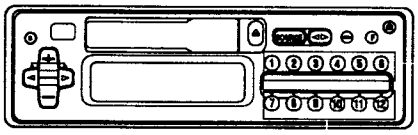
PIONEER
The Art of Entertainment

Service Manual

●KEH-P7000RDS/EW



ORDER NO.
CRT1559

MULTI-CD CONTROL FM/MW/LW TUNER DECK AMPLIFIER

KEH-P7000RDS EW,X1B

NOTE:

●Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation. "Dolby" and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.

●See the separate manual CX-529(CRT1507) for the cassette mechanism description.

●The cassette mechanism employed in this model is one of 1L mechanism series.

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K-FFU. DEC. 1993 Printed in Japan

CHAPTER 1

1.SPECIFICATIONS

General
Power source ... ... 14.4 V DC (10.8 — 15.6 V allowable)
Grounding system ... ... Negative type
Max. current consumption ... ... 6.0 A
Dimensions (chassis) ... 178 (W) × 50 (H) × 150 (D) mm
(front face) ... 188 (W) × 58 (H) × 15 (D) mm
Weight ... ... 1.4 kg

Amplifier
Maximum power output ... ... 22 W × 4 (EIAJ)
Continuous power output
... ... 14 W × 4 (DIN 45324, +B = 14.4 V)
Load impedance ... ... 4 Ω (4 — 8 Ω allowable)
Preout output level/output impedance
... ... 500 mV/1 kΩ
Tone controls (bass) ... ... ±12 dB (100 Hz)
(middle) ... ... ±12 dB (1 kHz)
(treble) ... ... ±12 dB (10 kHz)
Loudness contour ... ... +10 dB (100 Hz), +7 dB (10 kHz)
.....(Volume: -30 dB)

Tape player
Tape ... ... Compact cassette tape (C-30 — C-90)
Tape speed ... 4.76 cm/sec.(+0.14cm/sec.,-0.05cm/sec.)
Fast forward/rewind time ... Approx. 100 sec. for C-60
Wow & flutter ... ... 0.09 % (WRMS)
Frequency response ... Metal: 30 — 19,000 Hz (±3 dB)
Stereo separation ... ... 45 dB
Signal-to-noise ratio
... ... Metal: Dolby B NR IN: 67 dB (IEC-A network)
.....Dolby NR OUT: 61 dB (IEC-A network)

FM tuner
Frequency range ..... 87.5 — 108 MHz
Usable sensitivity ..... 11 dBf (1.0 µV/75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity ..... 16 dBf (1.7 µV/75 Ω, mono)
Signal-to-noise ratio ..... 70 dB (IEC-A network)
Distortion ..... 0.3 % (at 65 dBf, 1 kHz, stereo)
Frequency response ..... 30 — 15,000 Hz (±3 dB)
Stereo separation ..... 40 dB (at 65 dBf, 1 kHz)

MW tuner
Frequency range ..... 531 — 1,602 kHz
Usable sensitivity ..... 18 µV (25 dB) (S/N: 20 dB)
Selectivity ..... 50 dB (±9 kHz)

LW tuner
Frequency range ..... 153 — 281 kHz
Usable sensitivity ..... 30 µV (30 dB) (S/N: 20 dB)
Selectivity ..... 50 dB (±9 kHz)

Note:
Specifications and the design are subject to possible modification without notice due to improvements.

2.OPERATION AND CONNECTION

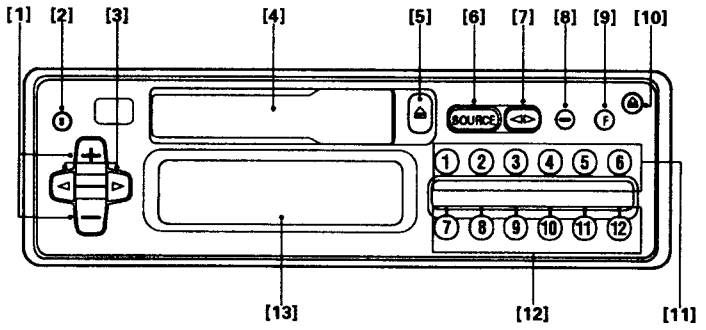


Fig.1

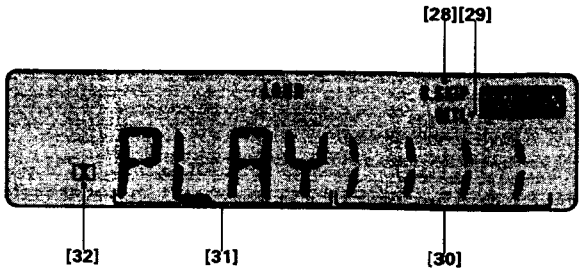


Fig.3

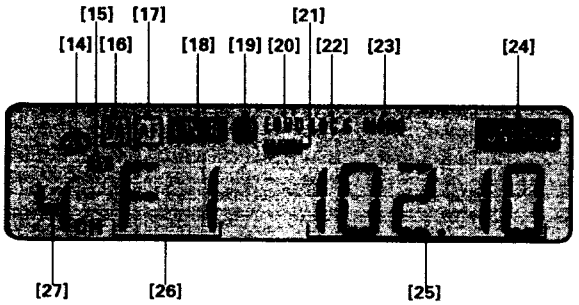


Fig.2

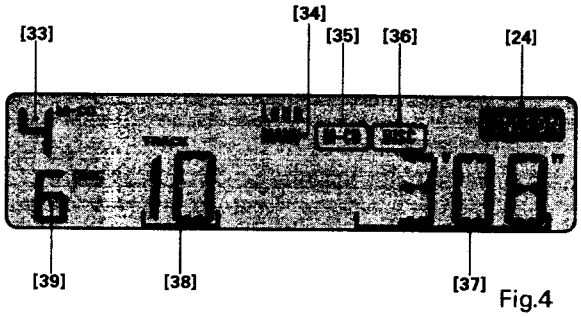


Fig.4

Using the Radio

Parts Identification

Fig. 1
[3] Tuning/Seek, Manual
[6] Source selector
[7] Band
[8] TA/AF
[9] Function ON/OFF
[11] Preset
[12] Preset (FM1)
[12] ⑦ Frequency display
[12] ⑧ Local Station/Local seek sensitivity
[12] ⑨ FM stereo/mono
[12] ⑩ Best Stations Memory (BSM)/Preset scan
[12] ⑫ EON/Regional (REG)
[13] Display

Fig. 2
[14] FM stereo
[15] REG
[16] TA
[17] AF
[18] EON TP
[19] TP
[21] Manual
[22] Local Station
[23] FM mono
[24] Function Indicator
[25] Frequency
[26] Band
[27] Preset number

Listening to the Radio

• **Electronic Tuner**
Frequency allocation differs depending upon the area. This unit has been designed in accordance with the frequency allocations for Western Europe, Asia, the Middle and Near East, Africa, Australia and Oceania. Use in other areas may result in improper reception of AM.

1.Press button [6] to switch the radio power on.
2.Press button [7] to select a band.

F1 → F2 → M/L
(FM1) (FM2) (MW/LW)

When the frequency is changed with button [3], MW (531-1,602 kHz) and LW (153-281 kHz) are switched automatically.
3.Use seek tuning to tune in a frequency.
Ensure that "MANU" [21] is not indicated on the display. (If so, turn it off by simultaneously pressing the (◄) and the (►) sides of button [3].) Press either the (◄) side or the (►) side of button [3].
When the (►) side is pressed, the tuner will automatically receive high frequencies.
When the (◄) side is pressed, it will automatically receive low frequencies.
4.Adjust volume and tone .
5.Assign the tuned frequency to one of the buttons in Bank [11] (the buttons in Bank [12] are also used in FM1) (Preset memory).
Press and hold down one of the button in Bank [11] (FM1:[11] and [12]) for at least two seconds. The frequency is assigned to the selected button when the preset number [27] stops flashing on the display. Up to 18 FM stations (12 for FM1 and 6 for FM2), and 6 MW/LW stations can be assigned to the preset memory buttons in Bank [11] (FM1:[11] and [12]).
6.Once a frequency is assigned to a button in Bank [11] (FM1:[11] and [12]), you just need to press that button to tune it in.

This also causes the number of the button pressed to appear at position [27] on the display.

Manual Tuning

Use manual tuning when stations are too weak to be picked up by seek tuning.

1. Turn on "MANU" [21] by simultaneously pressing the (◄) side and the (►) side of button [3].
2. Each press of the (►) side of button [3] increases the frequency in 50 kHz steps in the FM band, 9 kHz in the MW band and 1 kHz in the LW band.
   Pressing the (◄) side of button [3] decreases the frequency. Holding down either side of button [3] changes the frequency at high speed.

Function Mode

The button in Bank [12] can be used as the function button. Since 12 stations can be preset for FM1, the function is turned on or off with button [9]. (When the function is on, button [9] lights in yellow, and when it is off, it lights in red.) Since only 6 stations can be preset for FM2 and MW/LW, the function is automatically turned on. When the function is turned on, subsequent operations can be performed.

Adjusting Seek Sensitivity

The seek tuning function of this tuner lets you select between a local setting for reception of strong stations only, and a DX (distant) setting for reception of weaker stations. The local setting also has four seek tuning sensitivity levels for FM and two levels for MW/LW to match local conditions.

Changing the Local Seek Sensitivity

1. Use button [7] to select a band.
2. Hold down the button ⑧ in Bank [12] for more than two seconds, and the display will show you the current local seek sensitivity for about 5 seconds.
3. While the local seek sensitivity remains on the display, press the (►) side of button [3] to increase the sensitivity level, and the (◄) side to decrease the level as shown below.
   FM : LOC-1 ⇄ LOC-2 ⇄ LOC-3 ⇄ LOC-4
   MW/LW: LOC-1 ⇄ LOC-2
   The LOC-4 setting allows reception of only the strongest stations, while lower settings let you receive progressively weaker stations.

- The display of local seek sensitivity returns to the frequency when about 5 seconds have elapsed after the change of sensitivity.

Switching between Local and DX

Press button ⑧ in Bank [12] to switch between Local and DX (distant) seek tuning. When "LOC.S" [22] is shown on the display, seek tuning is performed with the local seek sensitivity. Otherwise, seek tuning is performed with the DX seek sensitivity.

Switching between FM Stereo and Mono

Generally, it is best to allow the ARC (Automatic Reception Control) function to automatically set the optimum listening conditions. When stereo broadcasting is received, "◯" [14] will appear on the display. When there is a large amount of noise, you can press button ⑨ in Bank [12] for clearer mono reception ("MONO" [23] will appear on the display).

BSM (Best Stations Memory)

This function automatically locates stronger stations and automatically assigns their frequencies to the buttons in Bank [11] (FM1: [11] and [12]), from strongest to weakest. It comes in handy when trying to find local stations while driving.

1. Press button [7] and select a band.
2. Holding down button ⑩ in Bank [12] for about two seconds will start BSM search. At this time, "BSM" will flash on the display.
3. The frequency display will return once BSM search is complete, and frequencies are assigned to buttons ① through ⑥ (FM1:① through ⑫) in Bank [11] (FM1: [11], [12]).

- At the end of the BSM search, the displayed frequency is that assigned to button ① in Bank [11].
- You can cancel BSM search by pressing button ⑩ in Bank [12] again.
- *If there are fewer than 6 (FM1:12) strong stations in the area, some of the buttons in Bank [11] (FM1:[11], [12]) will not be assigned frequencies, so they will retain any frequencies assigned to them previously.*
- *BSM search may take as long as 30 seconds in areas where there are few strong stations.*

Preset Scan Tuning

This function lets you automatically monitor the stations assigned to the preset buttons.

1. Press button ⑩ in Bank [12]. The frequency will appear on the display [25] and the preset number [27] will light up. Each station assigned to the buttons in Bank [11] (FM1:[11], [12]) will be automatically tuned in for about 8 seconds.
2. When you hear a station that you like, press button ⑩ in Bank [12] again to cancel preset scan tuning and remain at that station.

Using the RDS Function

What is RDS?

RDS (Radio Data System) according to a CENELEC EN50067 is a system for transmitting data signals from FM broadcast transmitter along with the normal sound program. These data signals, which are imperceptable to listeners, are intended to aid radio listeners in tuning their receivers to a desired station. RDS receivers can decode these data signals for display or control purposes.

RDS digital signal includes various data, such as PI, PS, AF, TP, TA and EON.

PI.....**Program Identification Code**
PS.....**Program Service Name**
AF.....**List of Alternative Frequencies**
TP.....**Traffic Program Identification Code (Similar to SK signal of ARI system)**
TA.....**Traffic Announcement Code (Similar to DK signal of ARI system)**
EON.....**Enhanced Other Network Information Code.(In some countries. EON is not offered by broadcasters.)**

RDS Function of this Unit

This unit has the following functions for making use of RDS data.

- PS, the name of the currently listened station is displayed.
- AF (Alternative Frequency) function. This enables the receiver to automatically retune to more suitable frequencies transmitting the same program.
- TP/TA, EON, user selectable reception of the traffic information service, offered by RDS.

Network/Station Name Display

Switch the tuner on and choose one of the two FM bands.

When you tune into an RDS station with manual or seek tuning, the frequency display changes to the network/station name display after a few seconds by means of the PS code.

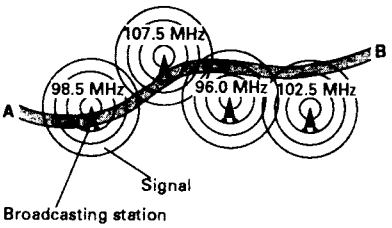
- The RDS functions of this unit use RDS codes transmitted along with FM broadcasts. RDS doesn't work on the MW or LW bands.
- The RDS functions may not work properly in areas where the RDS transmissions are at an experimental stage or where there are flaws in the broadcasting system.
- Hold down button ⑦ in Bank [12] for more than 2 seconds to change the network/station name display to the frequency display. The frequency will be displayed only while the button is being held down.

AF Function

This receiver retunes automatically to a more suitable transmitter, contained in the list of Alternative Frequencies (AF), to enable the motorist to keep listening to programs in the same network.

Example:

If a motorist travels as shown below, from point A to point B, (and has selected AF function) then the receiver will automatically retune to a more suitable frequency transmitting the same program. This is shown by the automatic retuning from 98.5 MHz to 107.5 MHz to 96.0 MHz to 102.5 MHz.



To activate the Alternative Frequency Function, holding down button [8] for about 2 seconds, "AF" [17] will appear on the display. Once tuned to a RDS station, as long as you drive within an area served by the same network, the receiver will automatically retune to a more suitable station transmitting the same program, by utilizing the data in the AF list.

- "PI SEEK" will appear on the display, if the AF function has been selected, and a suitable AF station cannot be found. In this case, the receiver will mute the radio sound and search the frequency band, in order to find a station with the same PI

code. The receiver will return to the original frequency if the same or related PI code can not be found.
- The AF function will not work in the following cases:
  — when the receiver is tuned to a non-RDS station. (local station)
  — when the RDS station does not transmit any AF list data.
  — when the receiver can not receive the AF list due to disturbances.

  When the receiver is unable to find a PI code the "AF" [17] indicator will flash on the display.
  Thus indicating that the AF function cannot be performed.

Preset recall
- When recalling preset stations in the AF mode, the tuner will be tuned to the stored frequency and the AF function will be operative i.e. when the signal of the recalled station is weak or has a different PI, the radio will look into the AF list and if necessary start a PI-seek in order to find a station with the same or related PI code. When the tuner is performing a PI seek "PI SEEK" is shown on the display.
  If the PI seek is successful, the tuner will be tuned to the new frequency that transmits the same programme service (i.e. with the same PI code) and the display will show the stored PS.
  If the PI seek is not successful, the tuner will return to the stored frequency. If a new station (with a different PI code) would be received on this frequency, this station will become audible. The display will show the frequency instead of PS.
- When recalling preset stations in the AF=OFF mode, the tuner will be tuned to the stored frequency and the display will show the stored PS. In case the tuned station has a PI code that is different from the stored one, the tuner will accept the new PI code and stay tuned to the initial frequency. The display will show the new PS when the signal of the tuned station is strong enough.

Listening to Regional Stations
In some countries a particular programme service may "opt out" during a certain part of the day in several regional variants at particular locations. Since these regional variants are broadcasting a different programme they temporally have a PI and a PS that is different from the main programme service. The PI's are mostly "generically linked". The AF list may either be common for all regional variants or each regional variant may have its own AF list.
In other countries there may be regional stations which are not an "opt out" of a particular main programme service but which have an independent existence. These regional stations all have a different PS. Their PI's may be "generically linked" and their AF lists may carry frequencies which are alternatives for that regional station only.

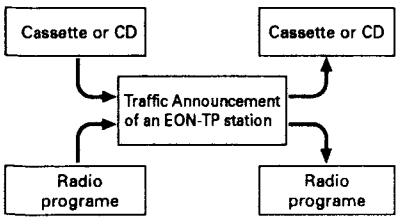
1) Regional OFF Mode
In the default condition, when the button [8] is held down for about 2 seconds to switch it ON, the receiver is in the REG OFF mode. In this case the receiver will switch automatically to regional variants of the tuned programme service along the journey. This is of benefit when the regional variants just carry the same programme, but will become annoying if the receiver switches back and forth between different programmes. In this case it is recommended to put the receiver in the REG ON mode.

2) Regional ON Mode
When the radio is put in the REG ON mode, the radio will remain tuned to a specific regional variant as long as it is available. To put the radio in the REG ON mode, hold down button ⑫ in Bank [12]. "REG" [15] will appear on the display.
To cancel the REG ON mode i.e. to put the radio back in the default REG OFF mode, hold down button ⑫ in Bank [12] again. "REG" [15] will disappear from the display.

Traffic Information Reception

TP and EON-TP function
When a traffic information station (TP station) is selected, "TP" [19] lights on the display, thus indicating traffic report can be received through this station. The "EON TP" [18] indicator will light on the display when a selected station (this network) is broadcasting EON information which cross-references at least one program service which carries traffic information, thus indicating traffic report can be received through another program service by using the EON function of this unit.
In both cases, by briefly pressing button [8], Traffic report waiting status will be entered. However, if you wish not to interrupt your radio program (eg: classical music program) by traffic report, the EON function of this unit can be set to OFF. Pressing button ⑫ in Bank [12] for more than 2 seconds, changes the status of the EON function, EON-ON ⇄ EON-OFF.
This indication is shown on the display for approximately 3 seconds.
If only the "EON TP" [18] indicator is on but the EON function of this unit is OFF, it is not possible to receive traffic report through another program service. In this case, "TA" [16] (if traffic report waiting status is set to ON) will flash on the display to indicate this situation.

Traffic information reception by EON-TP



Traffic Announcement Volume Adjustment
- The volume of the traffic announcement is temporarily stored in memory. The next time a report is received, the volume will be at the previous setting. However, if the volume of the traffic reception is below Vol 15, the volume will not decrease, and the preset volume of the traffic reception will be set to Vol 15.

TA Reception during CD or Cassette Play
- If the radio is already set to the FM band and tuned to a TP or EON-TP station, even when listening to the cassette or the multi-play CD player, when the button [8] is pushed ("TA" [16] is shown on the display), traffic report waiting will begin. When a traffic report begins, the system will switch from cassette or CD to the traffic report.

BSA function
- While button [8] is on, ("TA" [16] is shown on the display) and AF function is off, and you are listening to either the cassette or multi-play CD player, should the TP station become weak, the radio will start BSA (Best TP Station Auto Search) 10 seconds after "TP" [19] disappears from the diplay. The tuner will automatically tune to the strongest TP station in the area, and will stand by for a traffic bulletin. BSA does not work when the AF function is selected, so turn the AF function off by pressing button [8] for about 2 seconds when you want to use BSA.

TP Alarm Function
- In AF mode, about 30 seconds after "TP" [19] disappears from the display, which occurs if the signal from the TP station becomes weak, an alarm sounds for 10 seconds to tell you to tune to another TP stations.

Tuning Functions on each RDS modes

Tuning Mode	AF Mode	TA Mode & AF plus TA Mode
Seek Tuning will stop to find,	RDS Stations	TP or EON-TP Stations
BSM will select and memorize in presets,	RDS Stations	TP Stations

Non-RDS station such as those using the Swedish MBS system may be tuned in as RDS station, but this is due to both systems using the same 57 kHz subcarrier frequency and is not a mulfunction of the unit.

Tuning Steps
The tuning step is normally 50 kHz during seek tuning on an FM band. However this tuning step changes to 100 kHz when the set is in AF or TP mode. In some countries it may be desired to set a tuning step of 50 kHz in AF mode by holding down the button ① in Bank [11] while turning the ignition key from OFF to ON.
- During manual tuning, the step does not change; it remains fixed at 50 kHz.
- The tuning step will return to 100kHz if the batteries supply is temporarily disconnected or the clear button is pressed.
- In AF mode, only those stations being broadcast at 100 kHz steps are subject to AF reception (CENELEC STANDARD).

Using the Tape Deck

Parts Identification

Fig. 1
[3] Fast Forward, Rewind/Music search
[4] Cassette door
[5] Eject
[7] Direction change/Release
[11] ③ Blank Skip (B. SKIP)
[11] ④ Dolby B NR
[11] ⑤ Repeat (RPT)
[13] Display

Fig. 3
[28] Blank Skip (B. SKIP)
[29] Metal
[30] Tape running direction indicator
[31] Play indicator
[32] Dolby B NR

About Cassette Tapes

- *Do not use tapes longer than C-90-type (90 min.) cassettes. Longer tapes can interfere with tape transport.*
- *A loose or warped label on a cassette tape may interfere with the eject mechanism of the unit or cause the cassette to become jammed in the unit. Avoid using such tapes or remove such labels from the cassette before attempting use.*
- *Storing cassettes in areas directly exposed to sunlight or high temperatures can distort them and subsequently interfere with tape transport. (Fig. 5)*

Fig. 5

- *Store unused tapes in a tape case where there is no danger of them becoming loose or being exposed to dust.*

Cleaning the Head

If the playback head becomes dirty, sound quality will suffer. Periodically (once or twice a month) clean the head with a cotton swab soaked with alcohol. (Fig. 6)

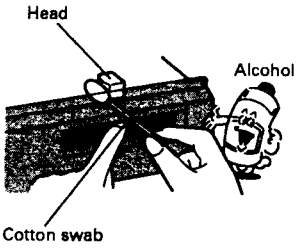


Fig. 6

Listening to a Tape

1. Insert the cassette tape into the slot [4], and power will be turned on and the tape begin being played back.
At this time, the tape running direction indicator [30] will light up.
2. Adjust volume and tone .
3. To eject the cassette tape, press the button [5].
- *Do not try to eject the cassette immediately after insertion, as it will cause malfunction. Wait a few seconds.*

Changing Program

When button [7] is pressed, the tape switches from side A to side B (or from side B to side A). (If the button is pressed during fast forwarding or rewinding, the current side is played.)

Dolby B NR

To hear a tape recorded using a Dolby NR system, press the button ④ in Bank [11]. ("DD" [32] appears.)
- Dolby noise reduction manufactured under license from Dolby Laboratories Licensing Corporation.
"DOLBY" and the double-D symbol DD are trademarks of Dolby Laboratories Licensing Corporation.

Using Fast Forward and Rewind

1. To fast forward tape, press the (►) side of the button [3].
(Display shows "FF".)
To rewind tape, press the (◄) side.
(Display shows "REW".)
2. To release the fast forward or rewind function, press the button [7].

Using Music Search

1. To repeat the current selection (A), press the (◄) side of the button [3] two consecutive times.
(Display shows "R-MS".)
To hear the following piece of music (B) rather than continue the current selection, press the (►) side of the button [3] two consecutive times.
(Display shows "F-MS".)
Pressing the button [3] three consecutive times makes the normal sequence of playing resume.
2. To release the music search function, press the button [7].

The following errors will cause the music search function to operate improperly, even though the unit is not malfunctioning.
- Unrecorded blank portion between selection is less than 4 seconds → the blank portion cannot be detected by the unit.
- Pauses in recorded conversations are longer than 4 seconds → the unit reads these as blanks between selections.
- Portions are recorded at very low volume for more than 4 seconds → the unit reads these as blanks between selections.

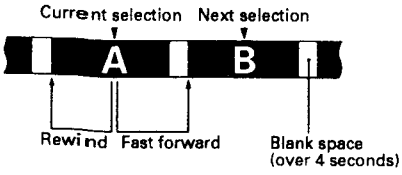


Fig. 7

Auto Tape Selector

When a cassette tape is inserted, the automatic tape selector determines the tape type, and switches between 70 µs and 120 µs equalization. When it is a metal or chrome tape, "MTL" [29] comes on. When it is a normal tape, nothing comes on.

Using the blank skip function

Automatically carriers out fast forward to the start of the next selection when there is a blank area of 12 seconds or more between selections.
1. Press button ③ in Bank [11] until "B. SKIP" [28] appears.
2. To release the blank skip function, press button ③ in Bank [11] again.

Using the Music Repeat Function

Lets you listen to the same selection repeatedly.
1. Press button ⑤ in Bank [11] when you are listening to the track to be repeated until "RPT" appears on display [31].
2. To cancel the music repeat function, press button ⑤ in Bank [11] again or press button [7].

Playing Compact Discs

Precautions When Using the Multi-Play CD Control

- If the IPS-BUS extension adapter is used, up to 4 multi play CD players can be connected. When two or more CD players are connected, their priorities must be specified for the Multi-play CD players. See the Multi-play CD players instructions and set the address switches correctly.
- Use this unit with optional multi-play CD players (CDX-P1200 or CDX-P600).
- If two or more multi-play CD players are connected to the unit, you can select the CD player to be played.
Each press of button [7] switches between the CD players and magazine number [33] on the display.

Parts Identification

Fig. 1

[3] Track number search/Fast Forward, Reverse
[6] Source selector
[7] Multi-play CD player select
[9] Function ON/OFF
[11] Disc number search
[12] Disc number search
[12] ⑦ Display selector/Edit
[12] ⑧ ITS (Instant Track Selection)/program clear
[12] ⑨ Play mode switching/ITS play
[12] ⑩ Scan /Random play
[12] ⑪ Title list
[12] ⑫ Pause
[13] Display

Fig. 4

[24] Function indicator
[33] Magazine number
[34] Manual
[35] Magazine repeat mode
[36] Disc repeat mode
[37] Elapsed play time display
[38] Track number
[39] Disc number

Using the Multi-Play CD Player

1. Press button [6] to change the display to the multi-play CD player mode and to begin disc play.

Each press of button [6] changes the mode as follows:
Tape → Radio → Multi-play CD player → OFF

2. Use the Disc Number Search function to select a disc.

Select the desired disc by pressing one of the button in Bank [11], [12]. The number of the disc selected appears at position [39] on the display.

- If the number at position [39] on the display does not change when you press a button in Bank [11], [12], it means that there is no disc loaded in that tray.

3. Adjust volume and tone .

4. To stop disc play, press button [6].

At another press, the normal play resumes from about where it stopped.

Note:

- It takes about 30 seconds from setting the magazine in the multi-play CD player till the start of CD playback. ("READY" appears on the display.) This does not indicate a problem; it is just for verifying there a disc in the magazine.
- When the multi-play CD player is not working corrently, an error message appears on the display (Ex: "ERROR-80"). Identify the error from the multi-play CD player owner's manual.
- After you press a button in Bank [11], [12], it may take some time before play begins due to the time necessary to load and set the disc in the mechanism.

Track Number Search

The desired track on the disc currently being played can be selected by track (or song) number.
Make sure "MANU" [34] is not displayed on the display. If it is, press the (◄) and (►) sides of button [3] at the same time to turn it off.
Press the (►) side of button [3] to increase the number at Position [38], or the (◄) side to decrease the number. Holding either side of button [3] down changes the track number at high speed.

Using Fast Forward and Reverse

1. Press the (◄) and (►) sides of button [3] at the same time. "MANU" [34] appears on the display.
2. Press the (►) side of button [3] for fast forward, and the (◄) side for reverse.

- Sound is output during fast forward and reverse operations.

Function Mode

If the 12-disc magazine CD player CDX-P1200 is combined with this unit, button [12] acts as the disc number search button. Press button [9] to switch between the function mode and disc number search button. (When the function mode is on, button [9] lights in yellow, and when it is off, it lights in red.)
When the function is turned on, subsequent operations can be performed.

Repeat

You can select one of the play modes (repeat modes) listed below.

Play mode (repeat mode)	Operation
One-Track Repeat	Play the current track repeatedly. • When you perform track number search or fast forward or rewind, the mode changes to disc repeat mode. • Switching the multi-CD player being played or the disc switches to magazine repeat mode.
Disc Repeat	Play the same disc repeatedly. • Switching the multi-CD player being played or the disc switches to magazine repeat mode.
Magazine Repeat	Play all discs loaded in the magazine in the multi-play CD player repeatedly. All discs in the magazine are played repeatedly from the first disc.
ALL Repeat	The mode changes to this mode when 2 or more multi-play CD players are connected. Multi-play CD players 1 to 4 are played.

Each press of button ⑨ in Bank [12] causes the mode to change as follows:
One-Track Repeat ("RPT" appears on the display [37]) → Disc Repeat ("(DISC)" [36] appears) → Magazine Repeat ("(M-CD)" [35] appears) → ALL Repeat

Random Play

The microcomputer of the multi-play CD player selects plays tracks on discs in random order. Random play is performed according to the current play mode (repeat mode) as follows:

Play mode (repeat mode)	Tracks to be played at random
One-Track Repeat	All tracks on the disc being played. • The play mode changes to disc repeat mode.
Disc Repeat	All tracks on the disc being played.
Magazine Repeat	All tracks on the discs in the magazine being played.
ALL Repeat*	All tracks on all discs in multi-play CD players 1 to 4.

* When 2 or more multi-play CD players are connected.

1. Select the desired random play mode (repeat mode). (See page 1-7.)
2. Hold down button ⑩ in Bank [12] for more than 2 seconds. ("RDM" appears on the display [37].) To cancel random play, hold down button ⑩ in Bank [12] for more than 2 seconds again. ("RDM" disappears.)

- Since selections are played in random order, the same selection may be played twice in succession.

Using Scan

The first parts of each track are played in succession for about 10 seconds. This function is useful to search for the track or disc you want to listen to. Scan is performed according to the current play mode (repeat mode) as follows:

Play mode (repeat mode)	Tracks to be scanned and played
One-Track Repeat	All tracks on the disc being played. • The play mode changes to disc repeat mode.
Disc Repeat	All tracks on the disc being played.
Magazine Repeat	The first tracks of all the discs in the magazine being played.
ALL Repeat*	First tracks of all discs loaded in multi-play CD players 1 to 4.

* When 2 or more multi-play CD players are connected.

1. Select the desired random play mode (repeat mode). (See page 1-7.)
2. Press button ⑩ in Bank [12]. ("SCAN" appears on the display [37].) The first parts of all tracks are played in succession for about 10 seconds.
3. When you hear the track you want, press button ⑩ in Bank [12] again to cancel Scan. ("SCAN" disappears.) The track (disc) being played is when played to the end.

- The previous function automatically resumes when a piece of music with which Scan began returns.

ITS (Instant Track Selection)

This function lets you program and play the tracks you want. You can listen to just your favorite tracks.

- The ADPS function* of the multi-play CD player lets you program up to 100 discs. (Up to 100 discs can be programmed including disc title inputs (see page 1-9).)
  * ADPS: Automatic Disc Program Selection
- Up to 99 tracks can be programmed for a single disc.
- When the number of discs exceeds 100, discs not being played (Information not being renewed) in memory is overwritten by the newest.
- Tracks are programmed for each disc. Programmed tracks are not erased after the disc is changed.

Programming

1. Play the track you want to program.
2. Press button ⑧ in Bank [12] to program the track. ("ITS" appears on the display [37] for 3 seconds.)

- Program tracks while ITS play is not in progress. It is possible during scan play or random play.

ITS Play

Track stored only in memory are played in order. Tracks are played according to ITS play mode (repeat mode) as follows:

Play mode (repeat mode)	Tracks to be played by ITS
One-Track Repeat	Programmed tracks on the disc being played. • The play mode changes to disc repeat mode.
Disc Repeat	Programmed tracks on the disc being played.
Magazine Repeat	Programmed tracks on the discs in the magazine being played. • If the disc being played contains no programmed tracks, the next disc containing programmed tracks is played.
ALL Repeat*	Programmed tracks on all discs in all magazines in multi-play CD players 1 to 4. • If the disc (multi-play CD) being played contains no programmed tracks, the next disc (multi-play CD) containing programmed tracks is played.

* When 2 or more multi-play CD players are connected.

1. Select the desired ITS play mode (repeat mode). (See page 1-7.)
2. Hold down button ⑨ in Bank [12] for more than 2 seconds. ("ITS.P" appears on the display [37].) To cancel ITS play, hold down button ⑨ in Bank [12] for more than 2 seconds again. ("ITS.P" disappears.)

- When you play a disc that has no tracks programmed, "EMPTY" will appear on the display [37] for about 3 seconds, indicating that ITS play is not possible.
- You can perform scan play or random play during ITS play. In this case, scan play or random play applies to all the tracks stored in memory. (If the play mode is the magazine repaet mode or all repeat mode, scan play applies to all the tracks of the discs in the magazine stored in memory.)
- During ITS play, multi-play CD players containing discs with programmed tracks are switched, and disc and track number search is performed on programmed tracks.

Erasing the ITS Program
You can erase one or all selections of the program for the disc being played by ITS.

To erase a single selection:
1. Start ITS play. (See page 1-8.)
2. Play the track you wish to erase by using disc number search or track number search.
3. Hold down button ⑧ in Bank [12] for more than 2 seconds. ("CLEAR" appears on the display [37] for about 3 seconds.)

To erase the disc program:
1. Start normal play.
2. Play the disc you wish to erase by using disc number search.
3. Hold down button ⑧ in Bank [12] for more than 2 seconds to erase the program. ("CLEAR" appears on the display [37] for about 3 seconds.)

Pausing
1. Press button ⑫ in Bank [12] to pause during disc playback ("PAUSE" appears on display [37]).
2. Press button ⑫ in Bank [12] again to release pause.

- You can select a track using the track number search during pause. ("PAUSE" is off while a track is being searched.) When the track search ends, the found track is paused at its betinning.

Disc Title Input
You can enter a title for the disc in the multi-play CD player. The title stored for the disc can be displayed.

- The ADPS function* of the multi-play CD player lets you enter titles for up to 100 discs. (Up to 100 discs, including ITS, can be programmed (see page 1-8).)
  *ADPS: Automatic Disc Program Selection
- A disc title can consist of up 8 characters for a single disc.
- When the number of discs exceeds 100, discs not being played (information not being renewed) in memory is overwritten by the newest.
- One title is stored for each disc. The title stored for a disc is not erased after the disc is changed.

Entering Titles
1. Select the disc for which you want to enter a title.
2. Hold down button ⑦ in Bank [12] for more than 2 seconds to select title input mode.
3. Press the (◄) or (►) side of button [3] to select the input position. The input position moves continuously when you hold down either side of the button.

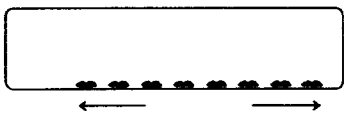


Fig. 8

4. Select characters using the (+) or (–) side of button [1]. When you hold down either side of the button, the character changes continuously. Each press of the (+) side changes the character from "A → B → C...", while each press of the (–) side changes the character from "C → B → A". To enter a space, press the space sign (_).
5. Enter all characters by repeating steps 3 and 4.
   Press button ⑦ in Bank [12] to store them in memory.
   The title will appear on the display.

Disc Title List
You can list all discs loaded in the magazine being played. This function is convenient for checking discs in the magazine being played.
Each press of button ⑪ in Bank [12] displays the titles of the discs in magazine being played in ascending order of disc number.
The disc title is displayed for about 8 seconds, then the normal operation display returns.

- *Nothing is displayed for discs having no titles.*
- *Trays with no discs are skipped.*

Select the disc to be played from the disc list display.
1. Press button ⑪ in Bank [12] to display the disc title.
2. When the title of the disc you want to listen to is displayed, press button ⑦ in Bank [12]. That disc is played.

Display Switching
Each press of button ⑦ in Bank [12] switches the display [37] between the elapsed play time and disc title.
When you press button [7] while the disc title is being displayed, the normal operation display will appear for 8 seconds.

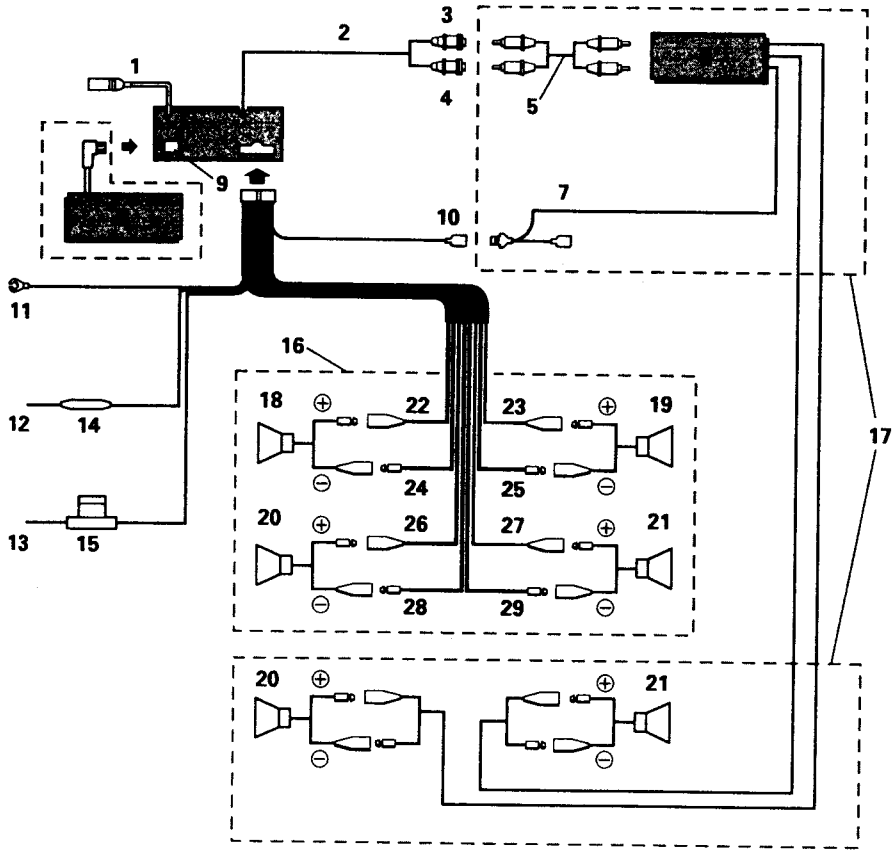


Fig.9

Connecting the Units

Note:

- *This unit is for vehicles with a 12-volt battery and negative grounding. Before installing it in a recreational vehicle, truck, or bus, check the battery voltage.*
- *To avoid shorts in the electrical system, be sure to disconnect the battery ⊖ cable before beginning installation.*
- *Refer to the owner's manual for details on connecting the various cords of the power amp and other units, then make connections correctly.*
- *Secure the wiring with cable clamps or adhesive tape. To protect the wiring, wrap adhesive tape around them where they lie against metal parts.*
- *Route and secure all wiring so it cannot touch any moving parts, such as the gear shift, handbrake, and seat rails. Do not route wiring in places that get hot, such as near the heater outlet. If the insulation of the wiring melts or gets torn, there is a danger of the wiring short-circuiting to the vehicle body.*
- *Don't pass the orange lead through a hole into the engine compartment to connect to the battery. This will damage the lead insulation and cause a very dangerous short.*
- *Do not shorten any leads. If you do, the protection circuit may fail to work when it should.*
- *Never feed power to other equipment by cutting the insulation of the power supply lead of the unit and tapping into the lead. The current capacity of the lead will be exceeded, causing over heating.*
- *When replacing fuse, be sure to use only fuse of the rating prescribed on the fuse holder.*
- *Since a unique BPTL circuit is employed, never wire so the speaker leads are directly grounded or the left and right speaker ⊖ leads are common.*
- *Speakers connected to this unit must be high-power types possessing minimum rating of 22W and impedance of 4 to 8 ohms. Connecting speakers with output and/or impedance values other than those noted here can damage the speakers.*
- *When the power amp is being linked with this system, be sure not to connect the blue lead to the amp's power terminal. Likewise, when linking this system with the auto-antenna, do not connect to power terminal for the antenna. Such connection can make overcurrent cause malfunctions.*
- *To prevent incorrect connection, the input side of the IP-BUS connector is blue, and the output side is black. Connect the connectors of the same colors correctly.*
- *When the unit is mounted in a vehicle whose ignition switch does not have the ACC (accessory) position, be sure to connect the red lead of the unit to the terminal controlled by the ignition switch ON/OFF position. If you do not, the vehicle battery may go flat when you leave your vehicle for several hours.*

ACC position
No ACC position

2/4/6-speaker system (Fig. 9)

1. Antenna jack
2. Rear out
3. White
4. Red
5. Connecting cords with RCA pin plugs (sold separetely)
6. Power amp (sold separetely)
7. Blue
8. Multi-play CD player etc. (sold separetely)
9. IP-BUS input (blue)
10. Blue
    To system control terminal of the power amp or Auto-antenna relay control terminal (Max.300mA 12VDC).
11. Black (ground)
    To vehicle (metal) body.
12. Red
    To electric terminal controlled by ignition switch (12VDC) ON/OFF.
13. Orange
    To terminal always supplied with power regardless of ignition switch position
14. Fuse resister
15. Fuse holder
16. With a 2 speaker system, connect to the 2 speakers in the front or the rear.
17. Use this for connections when you have the separately available amplifier.
18. Front/left speaker
19. Front/right speaker
20. Rear/left speaker
21. Rear/right speaker
22. Green
23. Gray
24. Green/black
25. Gray/black
26. Green/red
27. Gray/red
28. Black/green
29. Black/gray

3.DISASSEMBLY

●Removing the Case (not shown)

1.Remove the screw and, then remove the case.

●Removing the Cassette Mechanism Module (not shown)

1.Remove the four screws.

2.Disconnect the connector of deck unit.

3.Remove the cassette mechanism module.

●Removing the Detach Grille Assy (Fig.10)

1.Disconnect the connector.

2.Disconnect the two stoppers indicated by arrows.

3.Remove the detach grille assy.

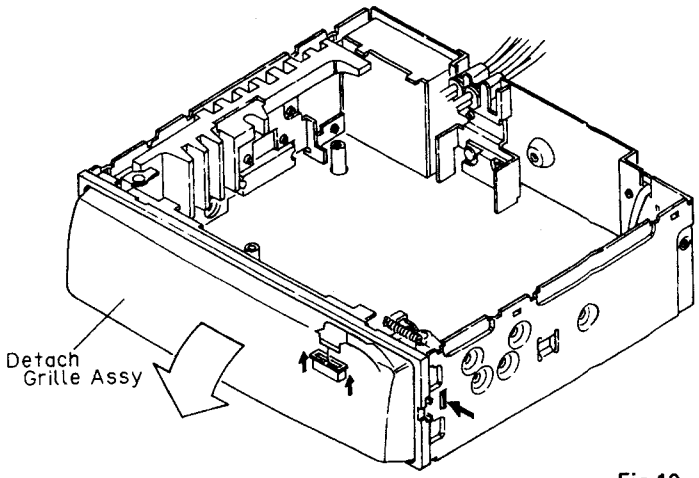


Fig.10

●Removing the Chassis Unit (Fig.11)

1.Remove the screw A , three screws B and four screws C.

2.Unbend the tabs at three locations indicated by arrows until straight.

3.Remove the chassis unit.

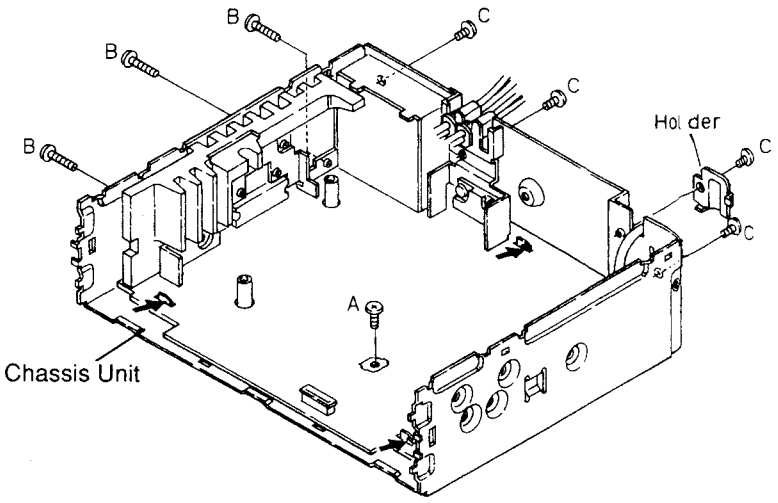


Fig.11

4.ADJUSTMENT

●Test Mode

Test mode is mainly used adjustment of IP BUS type CD multi players.

- Switching to test mode
  While pressing the 4, 6 keys together, switch the back up and ACC ON.
- Canceling test mode
  Switch the CD multi-player and back up and ACC OFF.

a) CD multi-player

Key	Function
BAND/CLR	Power ON/OFF
FF	FWD-KICK
REV	REV-KICK
F1	Tracking close
F2	Tracking open
F3	Focus close
F4	Focus open
F5	Jump OFF
F6	Carriage/Tracking

- SINGLE/10TRK/32TRK will continue to operate even after the key is released.Tracking closed the moment C-MOVE is released.
- JUMP MODE resets to SINGLE as soon as power is off.

●Flow Chart

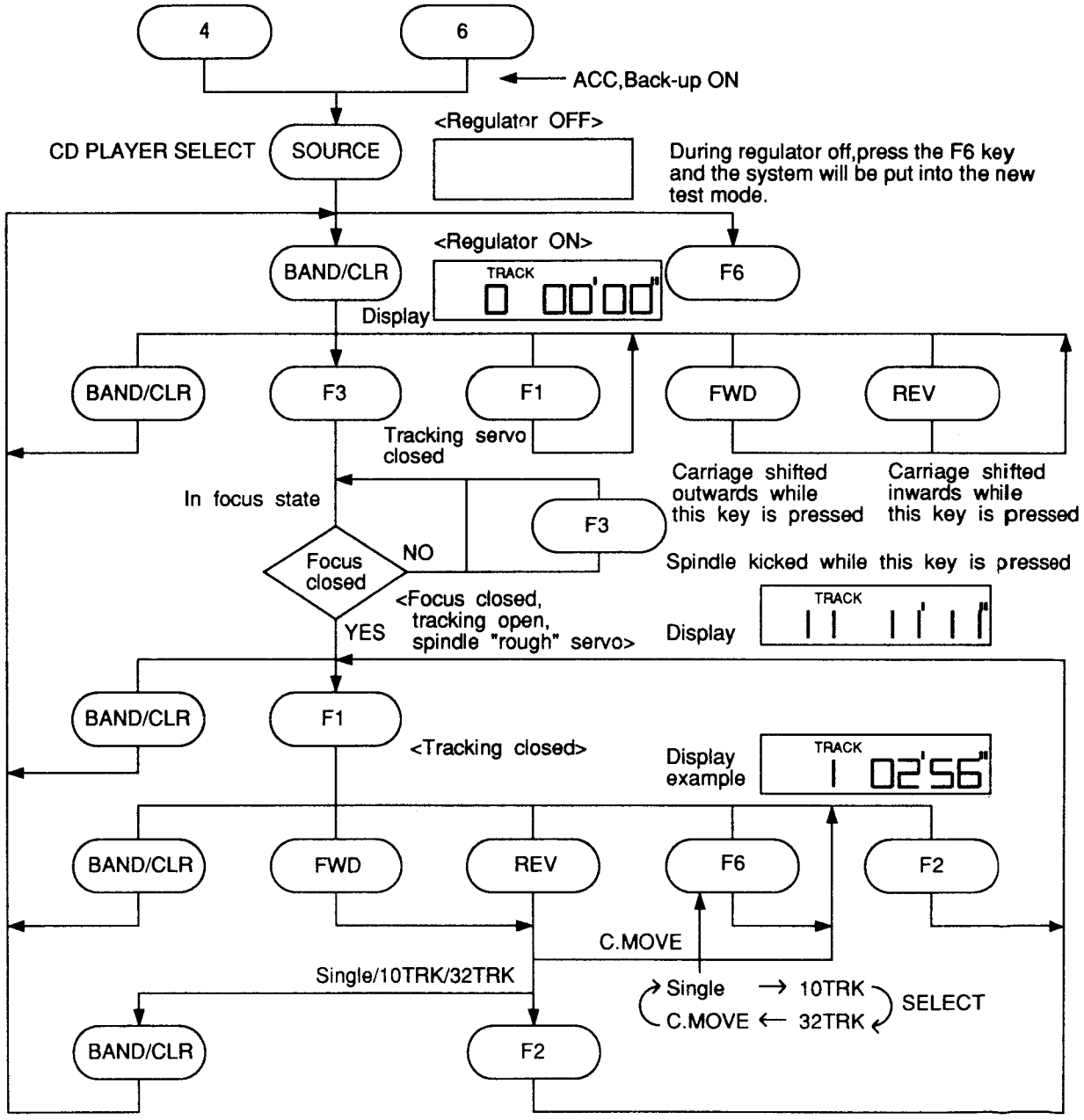


Fig.12

● **Error Numbers And New Test Mode**

● **Indicating An Error Number**

If the CD should fail to operate in CD multi player or if an error has taken place during the operation and resulted in an error, the player will enter into the error mode.And the cause of such error is numerically indicated.
This is armed at assisting an analysis or repair.

(1) Basic Means of Display

·With ERROR indicated in "MODE" on IP-BUS Display date, an error code is transmitter by the use of MIN and SEC. Identical date are transmitted with MIN and SEC.

·Examples of Head Unit Display ERROR XX

(2) Number of Error Codes

100 codes, ranging from 00 thought 99.

(3) Error Codes

Error Code	Classification	Description	Cause/Detail
10	ELECTRIC	Carriage home failure	Unmovable to and from the inner circumference →Home switch failed and/or carriage improper moved
11	ELECTRIC	Focus failure	Focus failed →Disk scarred or stained on the back or vibrating hard
12	ELECTRIC	SETUP failure	Spindle failed to lock or subcode extraordinary →Spindle defective, disk other than audio and ROM
14	ELECTRIC	Blank Disk	Unrecorded CD-R The disc has been in inserted upside down
30	ELECTRIC	Search time out	Target address failed to reach →Carriage/tracking improperly and/or disk scarred
A0	SYSTEM/ MECHANISM	Power failure	Power overvoltage or short circuit detected →Switching transistor defective and/or power abnormal
50	MECHANISM	An error upon ejection	MAG SW release time has time out Elevation time out when eject
60	MECHANISM	An error while putting in and out the tray	Tray in/out time has time out Tray is caught when put in
70	MECHANISM	An error upon elevation	Elevation time has time out
80	MECHANISM	An error with an empty magazine inserted	No disk is available

● **New Test Mode(aging operation and setup analysis)**

The CD multi player plays in normal mode. After being set up, it will display FOK (focus), LOCK (spindle), subcode, sound skip, protection against a mechanical error or the like, occurrence of an error, cause and time of an expiry, if any, (and disk number)
During the setup,the CD software operation status (internal RAM and C-point)is displayed.
The software on the head unit side does not involve any special problem but runs normally.

(1) How to Put in the NEW TEST Mode

See the test mode flow chart Page 1-13.

(2) Relations of keys between TEST and NEW TEST Modes

IP-BUS Commands	Keys	Test Mode		New Test Mode	
		Regulator OFF	Regulator ON	PLAY in progress	Error,Protection
15 00	BAND/ CLR	Power ON	Power OFF	—	Cause of error selected
15 01	FF	—	FWD-KICK	TRACK UP/FF	—
15 02	REV	—	REV-KICK	TRACK DOWN /REV	—
15 03	F·1	—	TRACKING CLOSE	SCAN	—
15 04	F·2	—	TRACKING OPEN	MODE CHANGE	—
15 05	F·3	—	FOCUS CLOSE	—	—
15 06	F·4 —	—	FOCUS OPEN	—	—
15 07	F·5 —	—	JUMP OFF	—	—
15 08	F·6	To New Test Mode	Jump-Mode Selected	AUTO/MANU	—

Operations,such as EJECT, CD ON/OFF, etc.are to be performed normally

(3) Error Cause (Error Number) Code

Error Code	Classification	Mode	Description	Cause/Detail
40	ELECTRIC	PLAY	FOK=L 100ms	Put out of focus
41	ELECTRIC	PLAY	LOCK=L 150ms	Spindle unlock
42	ELECTRIC	PLAY	Subcode unacceptable 500ms	Subcode fails to read
43	ELECTRIC	PLAY	Sound skipped	Last address memory operated

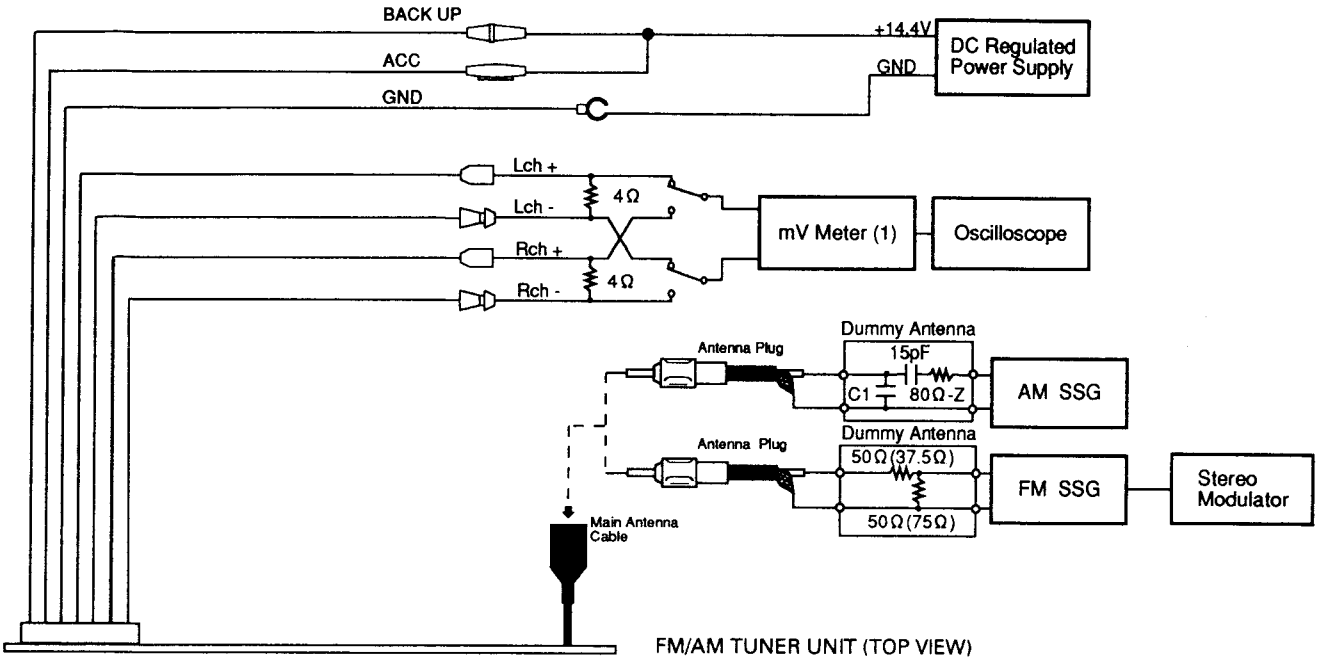
Scar, Stain, Vibration, Servo defect, etc...

(4) Indicating an Operation Status During Setup

Status No.	Description	Protection operation
01	Carriage home mode started	None
02	Carriage moving on the internal circumference	10-second time out
03	Carriage moving on the external circumference	10-second time out
11	Setup started	None
12	Spindle turn/Focus search started	None
13	Waiting for focus closing	Failure to focus closing
14	Spindle kicked and focus checked	Out of focus
15	Tracking closed and focus checked	Out of focus
17	Carriage closed and focus checked	Out of focus
18	Lock waiting Subcode waiting	Failure to lock,subcode failed to read Out of focus
19	End	None

●Connection Diagram

NOTICE:
Select C1 so that total capacity of 80pF is attained from the direction of the receiver jack.
Z: Output impedance of SSG.



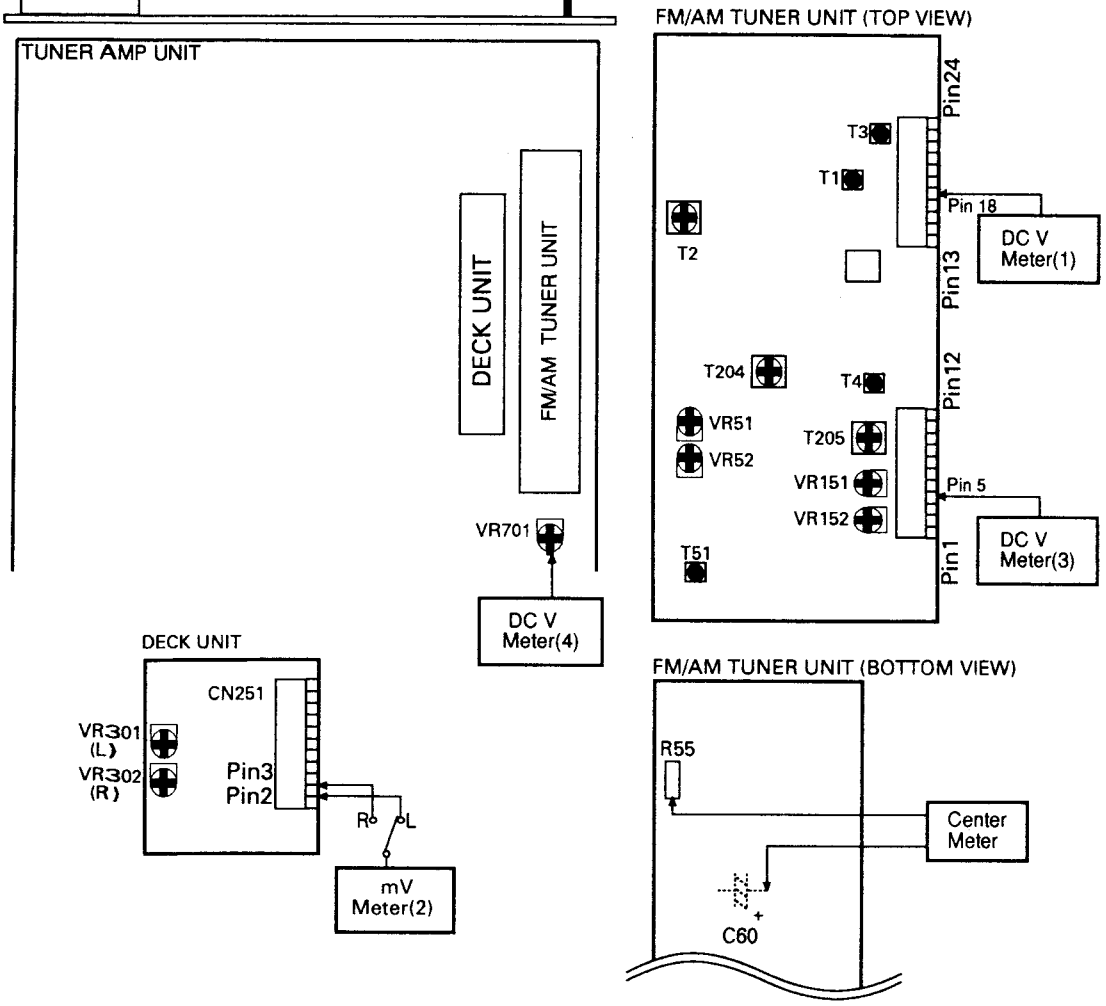


Fig.13

AM ADJUSTMENT

	No.	AM SSG(400Hz,30%)		Displayed Frequency(kHz)	Adjustment Point	Adjustment Method (Switch Position)
		Frequency(kHz)	Level(dB μV)			
IF	1	999	20	999	T204,T205,	mV Meter(1) : Maximum

FM ADJUSTMENT

Modulation M:MONO MOD., 400Hz 100%(75kHz Dev.)
S:STEREO MOD., 1kHz, L or R=90%, Pilot=10%(67.5kHz+7.5kHz Dev.)

NOTE:Before proceeding to further adjustments after switching power ON, let the tuner run for ten minutes to allow the circuits to stabilize.

	No.	FM SSG		Displayed Frequency(MHz)	Adjustment Point	Adjustment Method (Switch Position)
		Frequency(MHz)	Level(dBf)			
TUN Volt	1	108.0 M	65	108.0	T4	DC V Meter(1) : 6.5V±0.1V
IF	1	98.1 M	65	98.1	T51	Center Meter:0
ANT,RF	1	98.1 M	10	98.1	T1,T3	mV Meter(1) : Maximum
IFT	1	98.1 M	10	98.1	T2	mV Meter(1) : Maximum (AUTO ON)
Soft Mute	1	98.1 M	65	98.1		mV Meter(1) : A (AUTO ON)
	2	98.1 M	15	98.1	VR52	mV Meter(1) : A-3dB
MPX	1	98.1 S	65	98.1	VR152	mV Meter(1) : Separation Maximum
ARC	1	98.1 S	40	98.1	VR151	mV Meter(1) : Separation 5dB
SD	1	98.1 S	22	98.1	VR51	DC V Meter(3) : Approx. 5V (SEEK:ON)

DOLBY NR ADJUSTMENT

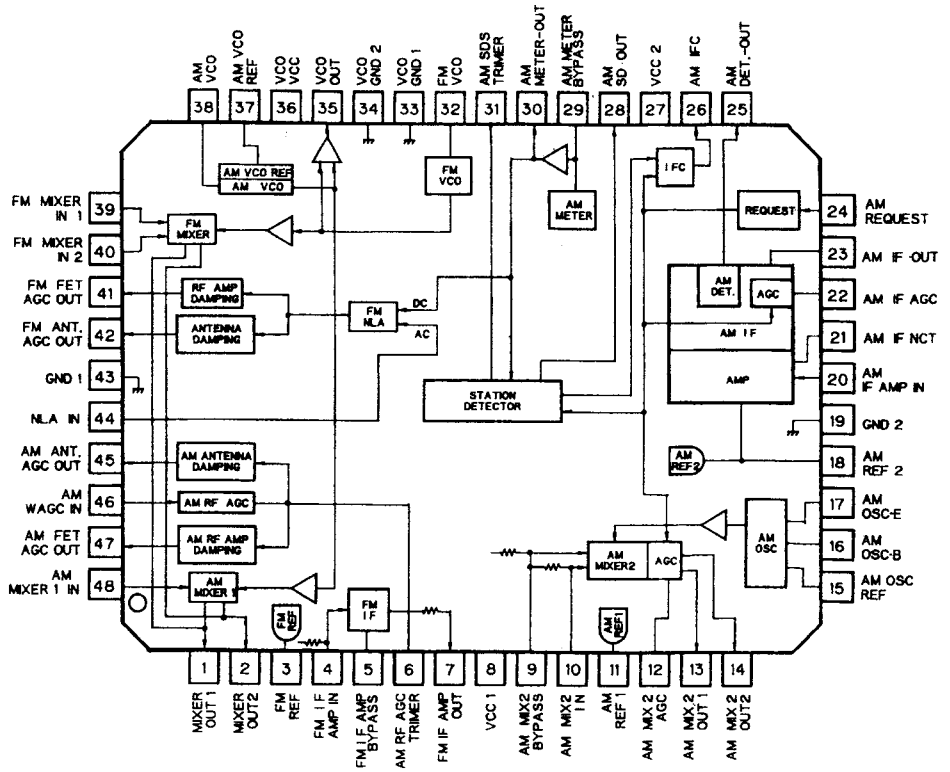
No.	Test Tape	Adjustment Point	Adjustment Method (Switch Position)
1	NCT-150 (400Hz,200nwb/m)	VR301(Lch),VR302(Rch)	mV Meter(2) : -8.24dBs(300mV)+1.5dB -5dB (DOLBY NR Switch : OFF)

RDS SL ADJUSTMENT

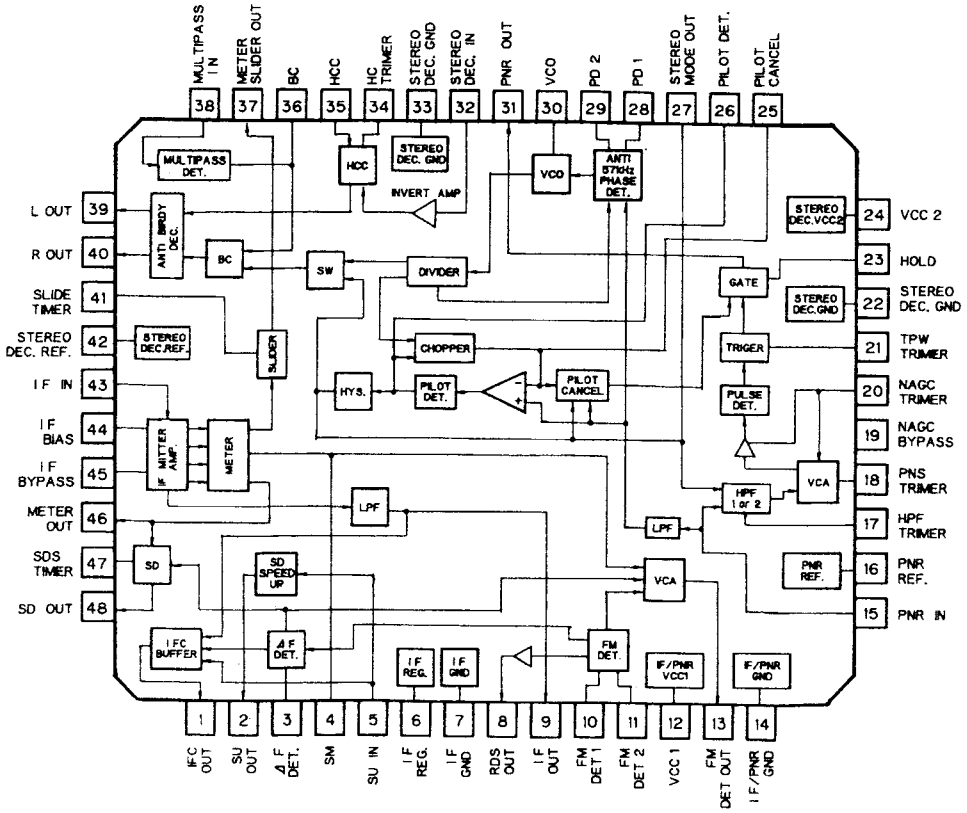
No.	FM SSG		Displayed Frequency(MHz)	Adjustment Point	Adjustment Method (Switch Position)
	Frequency(MHz)	Level(dBf)			
1	106.1 M	52	106.1	VR701	DC V Meter(4) : 2.25V±0.05V

● ICs

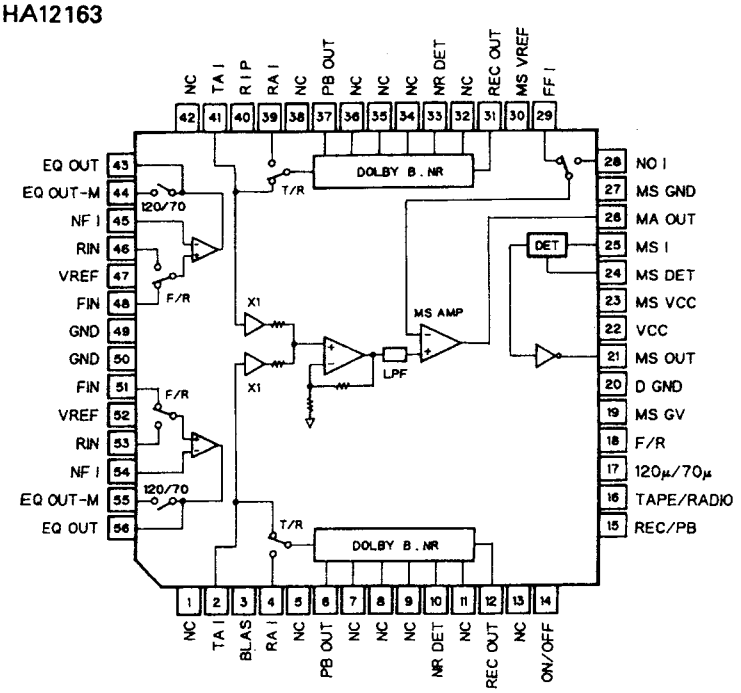
PA2021A



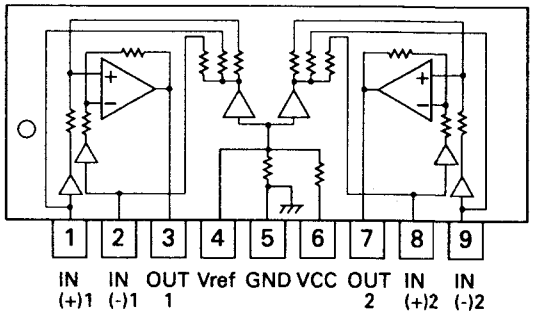
PA2022A



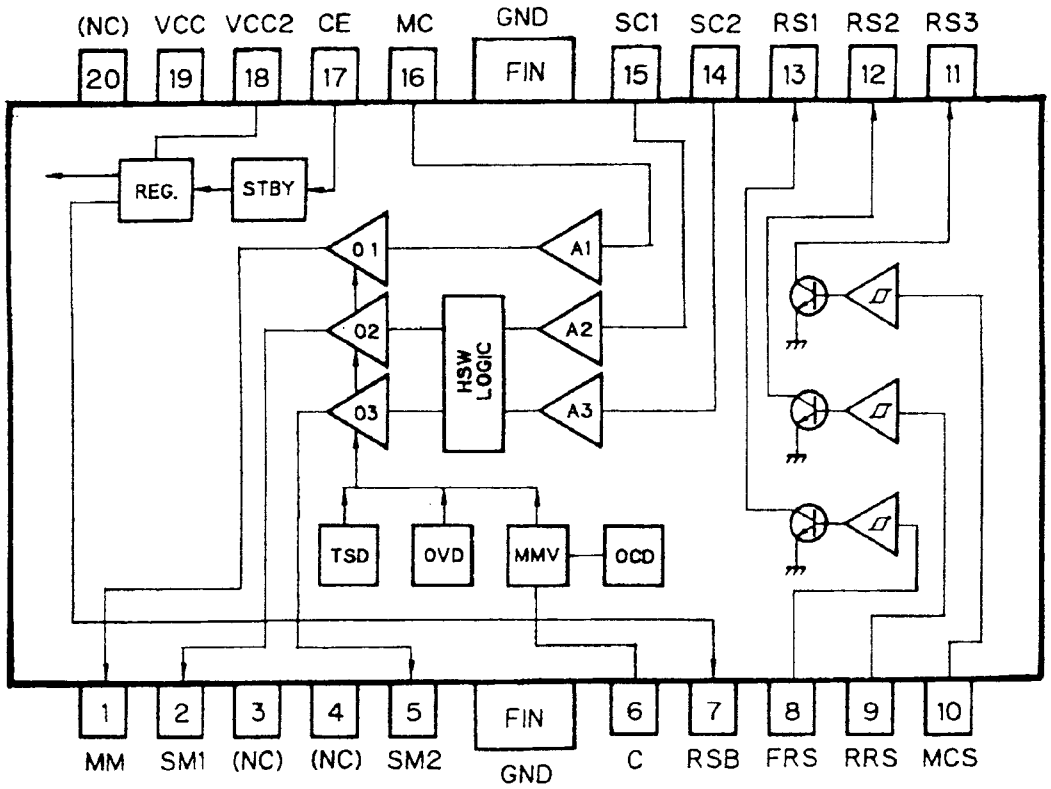
HA12163



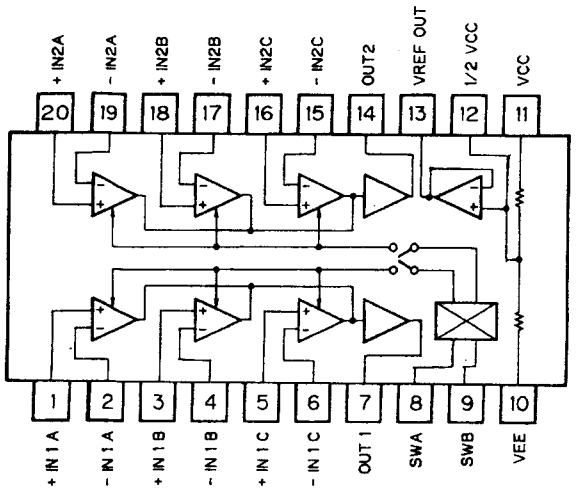
TA2050S



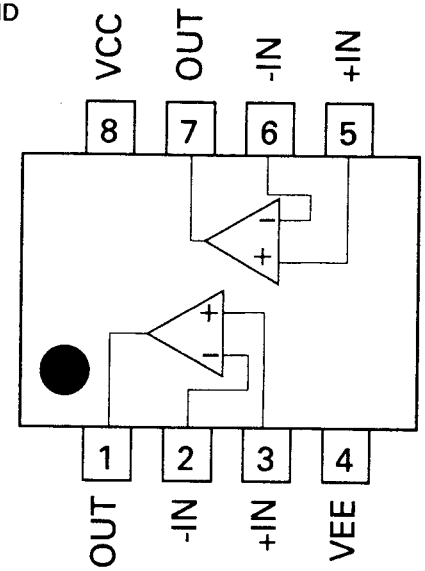
PA2020A



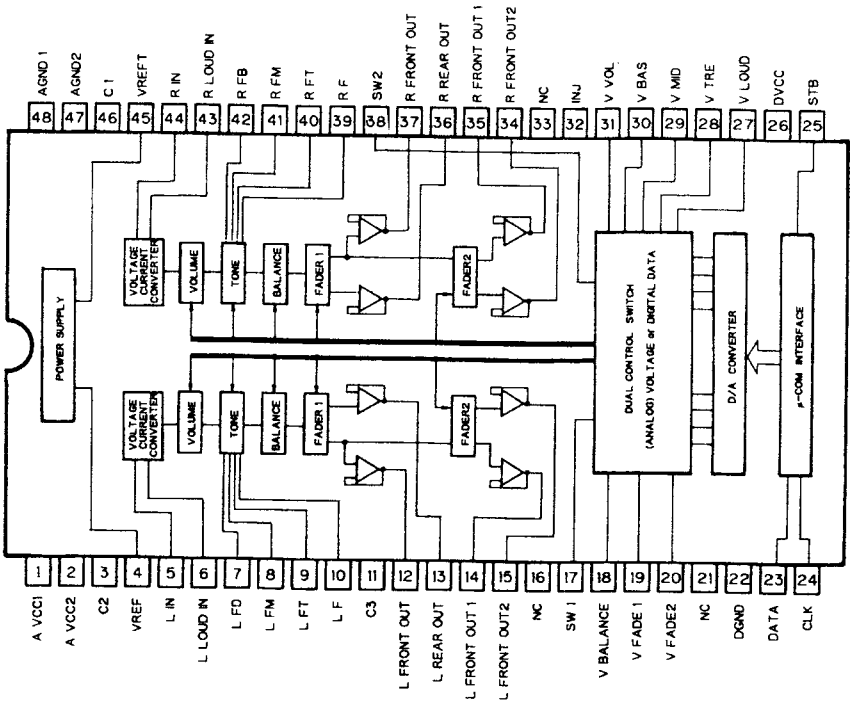
XRA3131FS



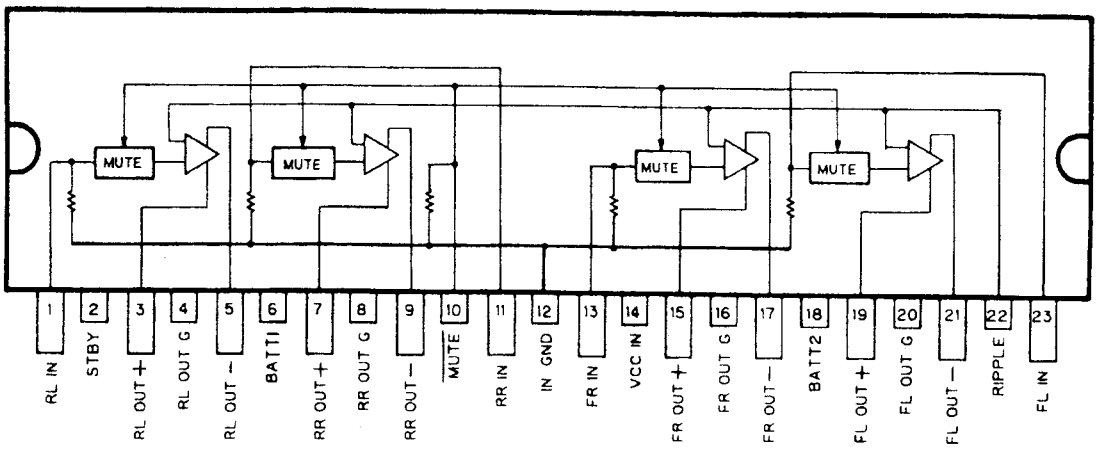
NJM2068MD



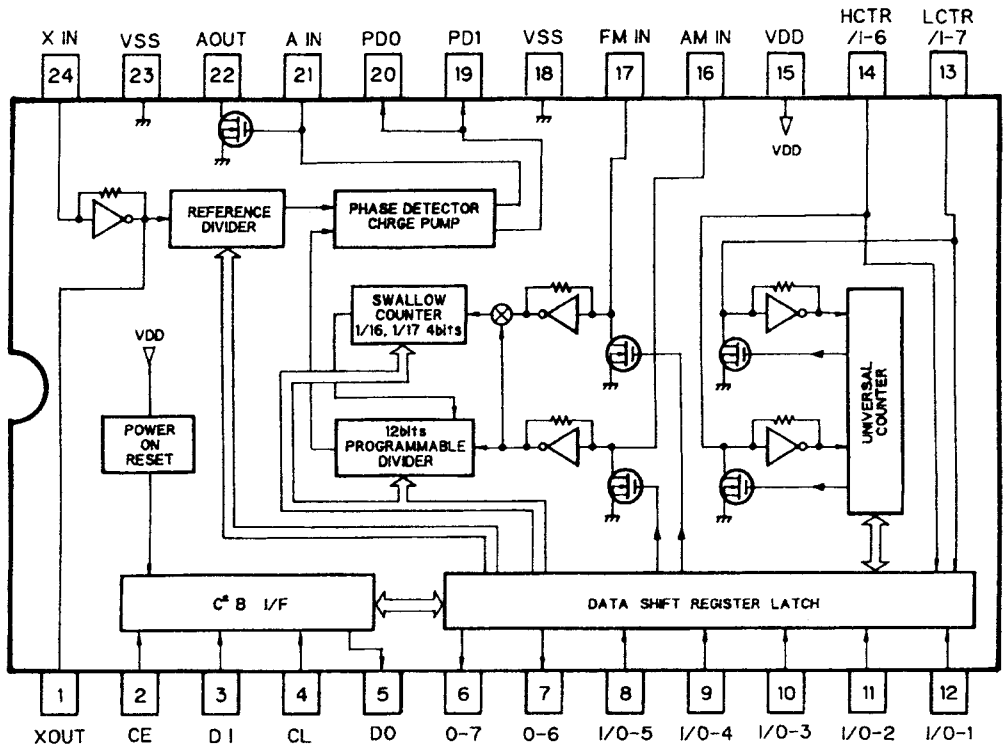
PM0004AM



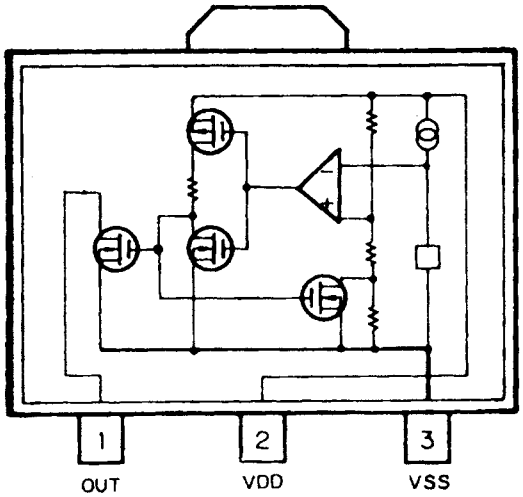
PA3029A



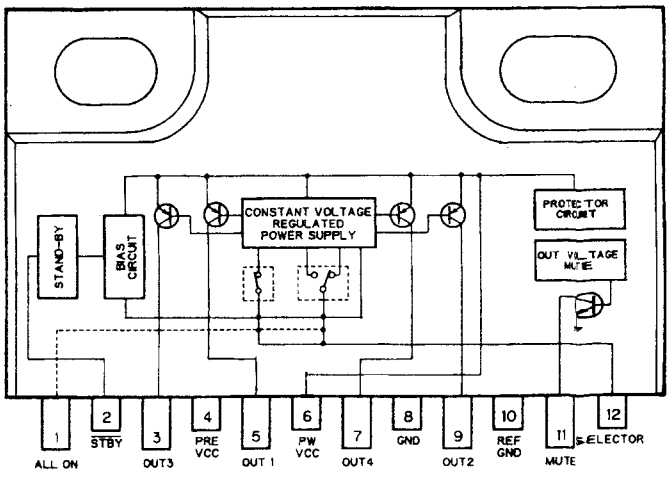
LC72140M



S-8073AN-DY



PA2023A



● **Pin Functions(PD4478A)**

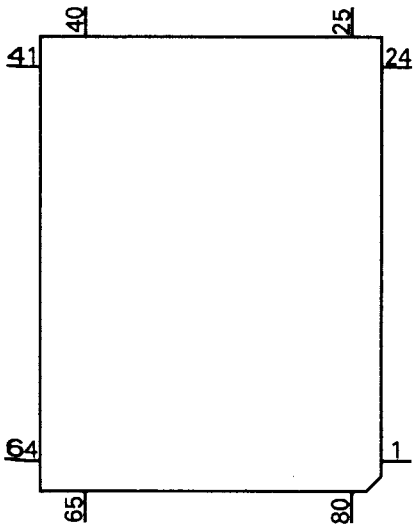
Pin No.	Pin Name	I/O	Output Format	Function and Operation
1	DILM	O	C	Dual illumination output
2	RDSRST	O	C	Reset output for RDS IC
3	RDSSEL	O	C	Select output for RDS IC
4	AVSS			A/D GND
5	RDSEN	O	C	Enable output for RDS IC
6	RDSRDY	I		Ready input from RDS IC
7	AVREF	I		A/D converter reference voltage
8	KYDT	I		Key data input
9	DPDT	O	C	Display data output
10	SWVDD	O	C	Grille power supply control output
11	RDSDI	I		Serial data input for RDS IC
12	RDSDO	O	C	Serial data output for RDS IC
13	RDSCK	O	C	Serial clock output for RDS IC
14	PDI	I		PLL data input
15	PCK	O	C	PLL clock output
16	PDO/TSI		C	PLL data output/Test program input
17	PCE/TSO		C	PLL enable/Test program output
18	MON/TSCK	O	C	Monaural output/Test program clock
19	NC			Not used
20	TUNPW	O	C	Tuner power control output
21	PLAY	O	C	MS gain select output
22	DLBYBC	O	C	Dolby NR B/C select output
23	NR	O	C	Dolby output
24	SC1	O	C	Cassette mechanism sub motor control output
25	SC2	O	C	Cassette mechanism sub motor control output
26	CM	O	C	Cassette mechanism capstan motor control output
27	MSIN	I		Cassette mechanism MS sense input
28	N/R	I		Tape direction input
29	MTLSW	I		Metal sense input
30	LOADSW	I		Tape loading input
31	POS	I		Cassette mechanism position sense input
32	RES	I		Cassette mechanism reverse end sense input
33	VSS			GND
34	NES	I		Cassette mechanism normal end sense input
35	STBY	O	C	Stand-by output
36	VOC	O	NM	Audition output
37	SUBW0	O	NM	Sub woofer control 0
38	SUBW1	O	NM	Sub woofer control 1
39–41	NC			Not used
42	BUSMUTE	O	C	IP BUS mute output
43	TMUTE	O	C	Tuner mute output
44	DMUTE	O	C	Deck mute output
45	PEE	O	C	Beep tone output
46	MUTE	O	C	System mute
47	SOR0	O	C	Source select output
48	SOR1	O	C	Source select output
49	PCL	O	C	Clock adjustment output
50	NC			Not used
51	FIX	O	C	Diversity control output
52	FM/AM	O	C	FM/AM power select output
53	ILMPW	O	C	Illumination power supply control output
54	SYSPW	O	C	System power supply control output
55	ASENB	I	C	Acc sense input
56	TX	O	C	IP BUS data output
57	RX	I		IP BUS data input
58	APPW	O	C	Serial IC power supply control output
59	SD	I		SD input
60	RESET	I		Reset input

Pin No.	Pin Name	I/O	Output Format	Function and Operation
61	TELIN	I		TEL mute signal input
62	$\overline{\text{BSENS}}$	I		Back up power sense input
63	$\overline{\text{ASENS}}$	I		ACC power sense input
64	$\overline{\text{DSENS}}$	I		Grille detach sense
65	VST	O	C	Strobe pulse output for electronic volume
66	VDT	O	C	Data output for electronic volume
67	VCK	O	C	Clock output for electronic volume
68	VDD			Power supply
69	X2			Crystal oscillator connection pin
70	X1			Crystal oscillator connection pin
71	IC			GND
72	XT2			Not used
73	TESTIN	I		Test program mode input
74	AVDD			Positive power supply terminal for analog circuit
75	AVREF0	I		A/D converter reference voltage
76	SL	I		Signal level input
77	SEL0	I		Model select pin
78	SEL1	I		Model select pin
79,80	NC			Not used

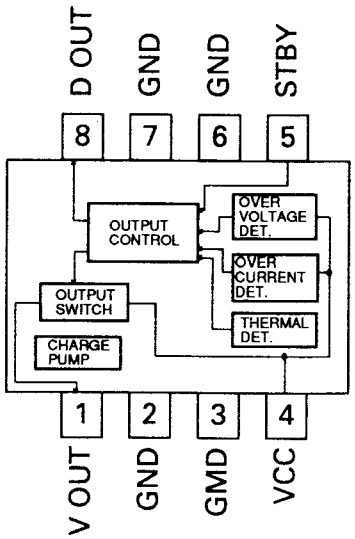
Output Format	Meaning
C	C MOS output
NM	Middle resistivity N channel open drain

IC's marked by are MOS type.*
Be careful in handing them because they are very liable to be damaged by electrostatic induction.

*PD4478A



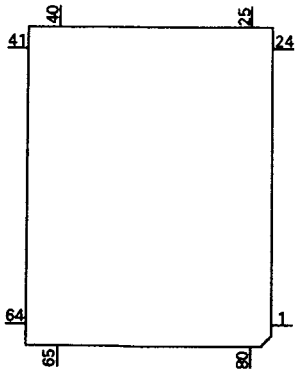
PML001A



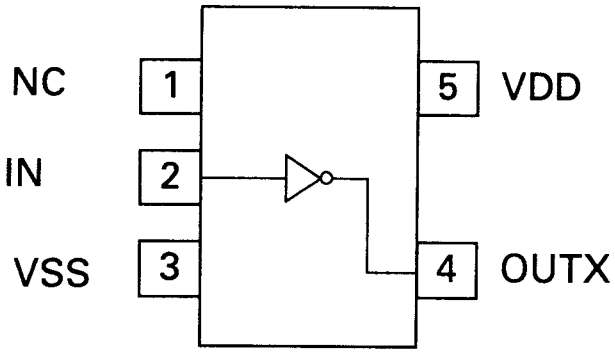
●Pin Functions (PD6122A)

Pin No.	Pin Name	I/O	Function and Operation
1	VSS		GND
2	X1		Crystal oscillator connection pin
3	X0		Crystal oscillator connection pin
4	NC		Not used
5,6	MODEL1,0	I	Model select input
7	R/Y	O	Function LED select output
8	KYDT	O	Key data output
9	DPDT	I	Display data input
10	REMIN	I	Remote control pulse input
11	ILM	O	Illumination color select output
12	R/Y	O	Function LED select output
13–16	KD4–KD1	I	Key sense input
17–22	KST6–1	O	Key strobe output
23	VCC		5V
24–34	NC		Not used
35–73	SEG38–0		LCD segment output
74–77	COM3–0	O	LCD common output
78–80	V3–V1		Power supply terminal

*PD6122A



SC14SU69F



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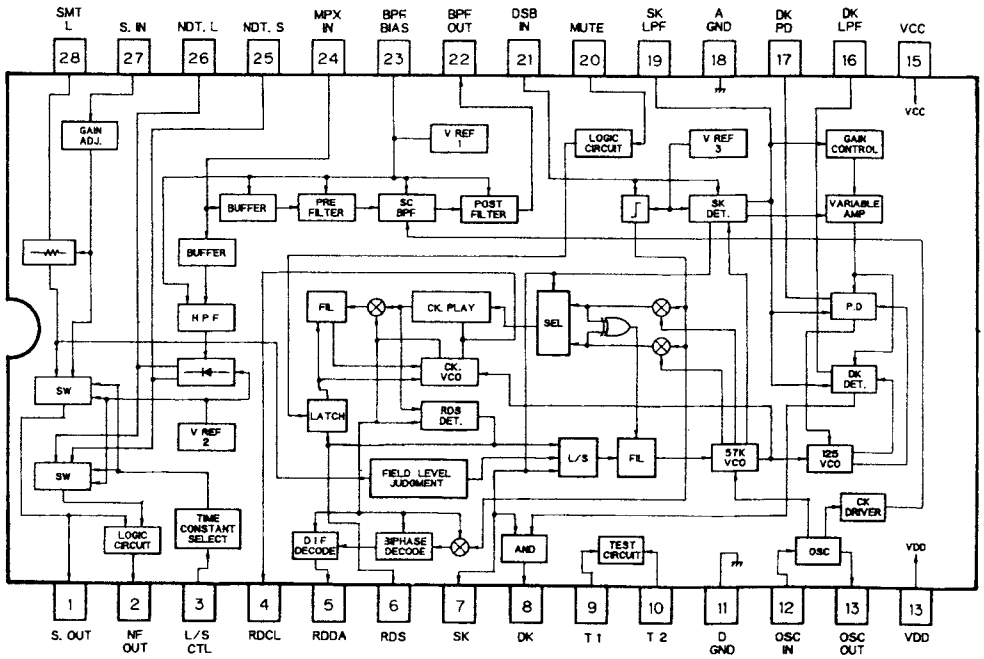
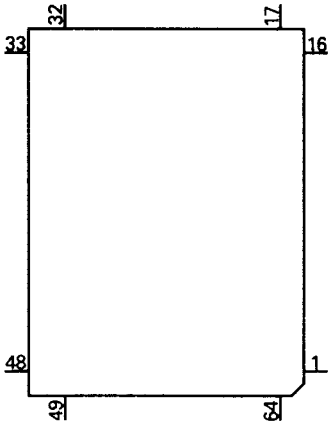


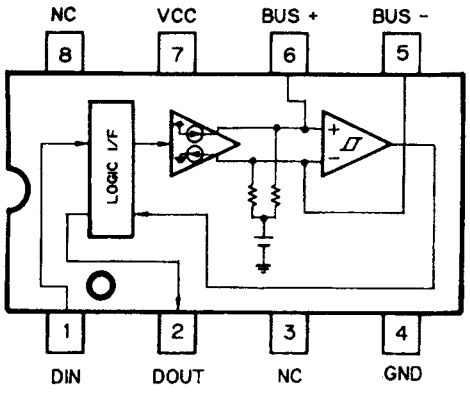
●**Pin Functions (PD0191A)**

Pin No.	Pin Name	I/O	Output Format	Function and Operation
1	RDSEN	I		Enable input from system control IC
2	$\overline{\text{RDSCK}}$	I		Serial clock input from system control IC
3–6	RDSDT7–4	I/O	C	Data input/output to system control IC
7–15	NC			Not used
16	RDSSEL	I		Select input from system control IC
17	TUNSEL	I		FM/AM tuner unit select input
18,19	NC			Not used
20	CNVSS	I		GND
21	RDSRST	I		Reset input from system control IC
22	XIN	I		Crystal oscillating element connection pin
23	XOUT	O		Crystal oscillating element connection pin
24	NC			Not used
25	VSS			GND
26	SCHK	I		Software check input
27–31	NC			Not used
32	RCK	I		RDS demodulation clock input
33	RDT	I		RDS demodulation data input
34–45	NC			Not used
46	DRST	O	C	Decoder reset output
47	SD	I		SD input
48	SK	I		SK signal input
49	$\overline{\text{RDSLK}}$	I		RDS LK signal input
50	$\overline{\text{DK}}$	I		DK signal input
51	ERROR	O	C	Disapprove of error correction output
52	CORR	O	C	Error output
53	RECIVE	O	C	During RDS data reception output
57	FZOUT	O	C	Fuzzy control output
58	VCC			5V
59	NC			Not used
60	FZIN	I		Fuzzy level input
61	SL	I		Signal level from tuner
62,63	NC			Not used
64	RDSRDY	O	C	Ready output for system control IC

*PD0191A



PA0051AM



●LCD(CAW1248)

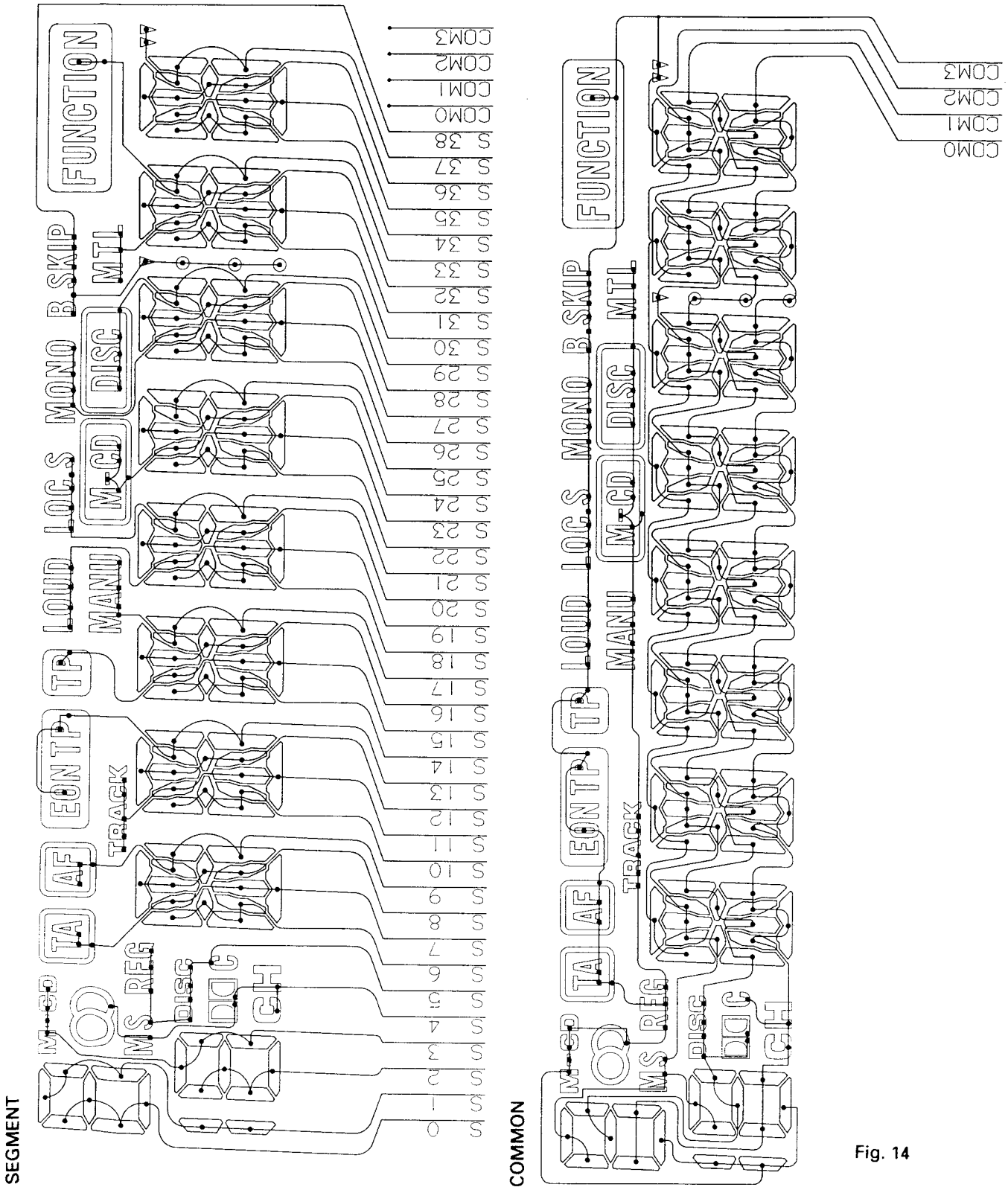


Fig. 14

5.ELECTRICAL PARTS LIST

NOTES:

- *Parts whose parts numbers are omitted are subject to being not supplied.*
- *The part numbers shown below indicate chip components.*

Chip Resistor

RS1/OSOOOJ,RS1/OOSOOOJ

Chip Capacitor (except for COS.....)

CKS....., CCS....., CSZS.....

=====Circuit Symbol & No.	Part Name=====	Part No.
Unit Number : CWE1313		
Unit Name : FM/AM Tuner Unit		
MISCELLANEOUS		
IC 1		PA2021A
IC 2		PA2022A
Q 1		3SK195
Q 2 202		2SC2712
Q 3		DTC124EU
Q 51		DTC124TU
Q 52		2SC4207
Q 53		2SA1586
Q 201		2SK435
D 1		1SV172
D 2 3 4		KV1410
D 5		MA151WK
D 6 151 202		MA157
D 201		MA157
D 203		SVC203CP
L 1	Inductor	LCTBR12K2125
L 2 52	Ferri-Inductor	LAU150K
L 51	Ferri-Inductor	LAU2R2K
L 201	Ferri-Inductor	LAU4R7K
L 202	Coil1mH	CTF1026
L 203	Inductor	LAU390K
L 204	Ferri-Inductor	LAU680K
L 205	Ferri-Inductor	LAU330K
L 206	Inductor	CTF1198
T 1	Coil	CTC1078
T 2	Coil	CTE1077
T 3	Coil	CTC1077
T 4	Coil	CTC1079
T 51	Coil	CTC1081
T 202	Coil	CTB1102
T 203	Coil	CTE1076
T 204	Coil	CTE1074
T 205	Coil	CTE1075
CF 1 51 52	Ceramic Filter	CTF1292
CF 201	Ceramic Filter	CTF1291
CF 202	Ceramic Filter	CTF1300
X 151	Ceramic Resonator	CSS1308
X 201	Crystal Resonator	CSS1111
VR 51	Semi-fixed 47kΩ(B)	CCP1210
VR 52	Semi-fixed 68kΩ(B)	CCP1211
VR 151	Semi-fixed 10kΩ(B)	CCP1206
VR 152	Semi-fixed 22kΩ(B)	CCP1208
AR 1	Capacitor with Discharge Gap	DSP-201M

=====Circuit Symbol & No.	Part Name=====	Part No.
RESISTORS		
R 1		RS1/16S152J
R 2		RS1/16S271J
R 3 10 16 18 20 103		RS1/16S223J
R 4 5		RS1/16S0R0J
R 6		RS1/16S680J
R 7 14		RS1/16S563J
R 8		RS1/16S331J
R 9		RS1/16S473J
R 11		RS1/16S474J
R 12		RS1/16S123J
R 13 15 217		RS1/16S563J
R 17 206		RS1/16S102J
R 21 22		RS1/16S560J
R 51 74		RS1/16S391J
R 52		RS1/16S152J
R 53		RS1/16S751J
R 55 157		RS1/16S682J
R 56		RS1/16S332J
R 58 73 203		RS1/16S102J
R 60		RS1/16S123J
R 72		RS1/16S391J
R 101		RS1/16S224J
R 102 104 222		RS1/16S822J
R 151 152		RS1/16S272J
R 153		RS1/16S103J
R 154 155 202		RS1/16S103J
R 156		RS1/16S153J
R 158		RS1/16S183J
R 159 216		RS1/16S103J
R 204 213		RS1/16S222J
R 205		RS1/16S823J
R 207		RS1/16S225J
R 208		RS1/16S752J
R 209		RS1/16S822J
R 214		RS1/16S333J
R 215		RS1/16S330J
R 218		RS1/16S333J
R 220		RS1/16S100J
R 221		RS1/16S473J
R 223		RS1/16S563J
CAPACITORS		
C 1 54		CCSRCH220J50
C 2		CCSRCH390J50
C 3 102 103 154 163 203 210		CKSQYB473K16
C 4 12		CCSRCH070D50
C 5 53		CCSRCH270J50
C 6		CKSRYB222K50
C 7		CCSRCH040C50
C 8 105		CKSRYB222K50
C 9 16		CCSRCH470J50
C 10		CCSRCH090D50

=====Circuit Symbol & No. Part Name=====	Part No.
C 11	CKSRYB223K25
C 13	CCSRCH070D50
C 14	CKSQYB103K25
C 15 22 55 101 151 164 219 220 225 227	CKSQYB104K25
C 17	CCSRCH100D50
C 18	CCSRCH080D50
C 19 20 21 52 62 71 74 201 207	CKSRYB103K50
C 23	CEA3R3M50LL
C 24 29 73 106 213	CKSRYB223K25
C 25	CKSRYB682K50
C 26 28 231	CEA101M16LL
C 51 223	CKSRYB103K50
C 56 162 211	CEA010M50LL
C 57 64 66 237	CCSRCH101J50
C 58	CKSRYB153K25
C 60	CEAR47M50LL
C 61	CEAR22M50LL
C 63	CKSQYB104K25
C 65	CEA0R1M50LL
C 104 226	CEA4R7M35LL
C 152 153	CKSRYB223K25
C 155	CEAR15M50LL
C 156	CKSQYB563K16
C 158 212	CEA100M16LL
C 159	CCSRCH331J50
C 160	CSZS010M16
C 161	CKSQYB104K25
C 202	CKSRYB332K50
C 204	CCSRCH120J50
C 205	CCSRCH560J50
C 206 221	CCSRCH680J50
C 208	CEA470M16LL
C 209 215 228	CKSRYB103K50
C 214 230	CKSRYB472K50
C 216	CCSRCH100D50
C 217	CCSRCH221J50
C 218 234	CEA220M16LL
C 222	CCSRCH150J50
C 224	CCSRCH181J50
C 229	CEAR68M50LL
C 232	CCSRCH390J50
C 233	CKSRYB332K50
C 235	CKSQYB104K25
C 236	CKSRYB223K25

Unit Number :CWM3113
Unit Name :Deck Unit

MISCELLANEOUS

IC 251		HA12163
IC 351		PA2020A
Q 271		2SC4116
Q 351		2SB1260
Q 352		2SC4102
D 351		MA141K
VR 301 302	Semi-fixed 33kΩ(B)	CCP1130

RESISTORS

R 251 252 253 254	RS1/10S104J
R 255 256	RS1/10S181J
R 257 258	RS1/10S183J
R 259 260	RS1/10S133J
R 261 262	RS1/10S274J
R 271	RS1/10S183J
R 272 273 322	RS1/10S223J
R 274	RS1/10S103J
R 275	RS1/10S473J
R 276 278	RS1/10S104J
R 277	RS1/10S224J
R 279 280	RS1/10S223J
R 351 352	RS1/10S102J
R 353 354	RS1/10S102J
R 355	RS1/10S274J
R 356	RS1/10S202J
R 357	RS1/10S472J
R 358 359	RS1/10S103J
R 360	RS1/10S102J
R 361	RS1/10S622J
R 401	RS1/10S273J
R 402	RS1/10S223J
R 403 405	RS1/10S274J
R 404	RS1/10S823J

CAPACITORS

C 251 252 253 254	CKSQYB471K50
C 255 256 353	CKSQYB103K50
C 257 258	CEVNP010M50
C 271	CEV010M50
C 272	CKSQYB104K25
C 301 302	CEVNPR47M50
C 309 310	CKSQYB104K16
C 351	CKSYB224K25
C 352	CKSQYB392K50
C 354	CKSQYB473K50
C 355	CKSYB104K50
C 356	CKSQYB103K50
C 401	CKSQYB182K50
C 402	CKSQYB822K50
C 403	CKSQYB333K50
C 404	CKSQYB471K50

Unit Number :CWM3581
Unit Name :Tuner Amp Unit

MISCELLANEOUS

IC 451		TA2050S
IC 452		XRA3131FS
IC 453		PM0004AM
IC 501		LC72140M
IC 551		PA3029A
IC 641		NJM2068MD
IC 701		PD4478A
IC 703		S-80734AN-DY
IC 704		PA2023A
IC 705		PML001A
IC 706		PA0051AM
IC 801		PMR001A
IC 802		PD0191A
IC 803		SC14SU69F
Q 451 452 703 711 802		2SC2712
Q 501		2SC3098
Q 502		2SC3295
Q 503 505		2SK208
Q 504 506 507 710 801		2SC2712
Q 551 704 707		DTC124EK
Q 552 803		DTC124EK
Q 591 592		DTC143TK
Q 593		DTC114TK
Q 641		DTC314TK
Q 642		DTC314TK
Q 701		DTA114EK
Q 702		2SB1243
Q 705 713	Chip Transistor	2SA1162
Q 706		DTC114EK
Q 709		DTA114EK

=====Circuit Symbol & No.	Part Name=====	Part No.
Q 712		2SD1760F5
Q 714		DTC124EK
Q 804		2SC4944
Q 805	Chip Transistor	2SA1162
D 501		MA3027H
D 502		MA3027H
D 503 709	Chip Diode	MA151WK
D 551 552 553 554 555 556 557 558 712		ERA15-02VH
D 703 704 705		MA153
D 706		MA3062H
D 707		MA151K
D 710		MA3075H
D 711		MA3082L
D 713		MA3056M
D 801		MA3047M
D 802		MA151K
L 501	Ferri-Inductor	CTF-157
L 502 701 702	Ferri-Inductor	LAU2R2M
L 703 704	Ferri-Inductor	LAU2R2M
L 801 802	Ferri-Inductor	LAU101K
X 501	Crystal Resonator	CSS1011
X 701		CSS1303
X 801	Crystal Resonator	CSS1056
S 701	Switch	CSG1046
VR 801		VRMB6VS222
BZ 701		CPV1011
	FM/AM Tuner Unit	CWE1313

RESISTORS

R 401 402	RS1/10S331J
R 403	RS1/10S272J
R 404	RS1/10S272J
R 405	RS1/10S103J
R 406	RS1/10S103J
R 407 408	RS1/10S273J
R 451 452 528 534 535 536 704 713 756 757	RS1/10S473J
R 453 454 459 460 479 480 513 518 519 520	RS1/10S102J
R 455 456	RS1/10S181J
R 457 458 507 746 758 843	RS1/10S223J
R 461 462 463 464 465 466 815 816 817 831	RS1/10S104J
R 467 468	RS1/10S123J
R 469 470	RS1/10S683J
R 471 472 475 476	RS1/10S303J
R 473 474	RS1/10S153J
R 477 478	RS1/10S183J
R 481 482	RS1/10S153J
R 483 484 509 514 523 570 734	RS1/10S103J
R 485 486	RS1/10S562J
R 487 488	RS1/10S562J
R 489 490 567 748 762	RS1/10S103J
R 491 492 493 511 526 527 537 538 558 595	RS1/10S472J
R 501	RS1/10S101J
R 502	RS1/10S332J
R 503	RS1/10S821J
R 504	RS1/10S331J
R 505	RS1/10S680J
R 506 515 516 524 525 735 747 763 823	RS1/10S222J
R 508 569	RS1/10S221J
R 510 517 521 809 812 814	RS1/10S102J
R 512	RS1/10S152J
R 522	RS1/10S123J
R 529	RS1/10S473J
R 530 531 532 533 820	RS1/10S222J
R 539	RS1/10S822J

=====Circuit Symbol & No.	Part Name=====	Part No.
R 540		RS1/10S102J
R 541		RS1/10S330J
R 542		RS1/10S102J
R 551 552 553		RS1/10S272J
R 554		RS1/10S272J
R 555 556 557 737 753 770		RS1/10S472J
R 559 560 561 562 563 564 565 566		RS1/10S2R2J
R 568		RS1/10S153J
R 591 592		RS1/10S272J
R 593 594		RS1/10S104J
R 641		RS1/10S223J
R 642		RS1/10S223J
R 643 644		RS1/10S153J
R 645		RS1/10S102J
R 646		RS1/10S102J
R 647 648 752 755		RS1/10S223J
R 701		RS1/10S620J
R 702 703 760 971 972		RS1/10S101J
R 705		RS1/10S124J
R 706 744 745 764 765 802 806 807 808		RS1/10S102J
R 708 710 754		RS1/10S473J
R 711 712		RS1/10S102J
R 714		RA4C473J
R 718		RA2CQ473J
R 720 724		RA4C222J
R 728		RA2CQ222J
R 731		RA4C681J
R 736		RS1/2S681J
R 738 739 740 741 742 743 749 761 803		RS1/10S472J
R 759 767 768 840 841 842 844 845 849		RS1/10S473J
R 766		RS1/10S683J
R 769		RS1/10S220J
R 792		RS1/10S0R0J
R 793		RS1/10S101J
R 801		RS1/4S750J
R 804 805 848		RS1/10S333J
R 810		RS1/10S152J
R 811 813 818		RS1/10S102J
R 824 825 826 827 834 837 977 978		RS1/10S681J
R 832 833 835		RS1/10S104J
R 838		RS1/10S105J
R 839		RS1/10S332J
R 847		RS1/10S273J
R 850		RS1/10S681J
R 973 974 975 976		RS1/10S0R0J
R 991 992		RS1/10S0R0J

CAPACITORS

C 401 402	CEAR3[illegible]M50LL
C 403 404	CKSQYB472K50
C 405 406 415 416 461 462 470 471 472 483	CEA10[illegible]M16LL
C 407 408 409 411 413	CKSQYB822K50
C 410 412 414	CKSQYB822K50
C 451 452 457 458	CEA01[illegible]M50LL
C 453 454 455 456	CEA01[illegible]M50NPLL
C 459 460 591 592 720	CEA01[illegible]M50LL
C 463 464	CCSQ[illegible]H270J50
C 465 466	CCSQ[illegible]H121J50
C 467 468	CCSQ[illegible]H121J50
C 469 645 646 710	CEA2R2[illegible]M50LL
C 473 474	CKSQYB333K25
C 475 476	CKSQYB682K50
C 477 478	CKSQYB682K50
C 479 480	CKSQYB683K25
C 481 482	CKSQYB681K50
C 484 485 486 495 570 707	CEA10[illegible]M16LL
C 487	CKSYB[illegible]04K25
C 488	CKSYF[illegible]05Z25

=====Circuit Symbol & No. Part Name=====	Part No.
C 489 491 492 494 559 560 561 562 563	CKSYB104K25
C 490	CKSYF105Z25
C 493	CEA470M10LL
C 496	CEA100M16LL
C 501	CCSQSL681J50
C 502 505 510 713 803 812 816	CKSQYB103K25
C 503 709	CCSQCH101J50
C 504 511 512 516 705 708 731	CCSQCH101J50
C 506 4.7μF/16V	CCH1165
C 507	CKSQYB103K25
C 508 0.047μF/16V	CCG1008
C 509	CFTNA474J50
C 513 706	CEA4R7M35LL
C 514 515 811 819	CKSQYB223K25
C 517 518	CCSQCH120J50
C 519	CKSQYB103K25
C 520	CKSQYB473K16
C 524 525	CCSQCH101J50
C 551 552 553 554	CEA4R7M35LL
C 555 556 557	CKSQYB102K50
C 558	CKSQYB102K50
C 564 565 566	CKSYB104K25
C 567 568	CKSQYB104K16
C 569	CEA330M10LL
C 571	CEHAQ472M16
C 643 644	CCSQCH101J50
C 647 648 728 729	CKSQYB102K50
C 703 704	CCSQCH270J50
C 711	CEAS102M16
C 714	CEA470M10LL
C 715	CKSQYB473K50
C 716	CEAS331M10
C 717 719	CEA470M10LL
C 718	CEA101M10LL
C 722	CSZA100K16
C 723	CKSQYB104K16
C 727 813	CKSQYB102K50
C 732	CKSQYB102K50
C 802	CEA1R5M50LS2
C 804	CEAR33M50LL
C 805	CKSQYB473K16
C 806	CKSQYB472K50
C 807 808	CSZS010M16
C 809	CSZS3R3M10
C 814	CEA100M16LL
C 815	CKSQYB472K50
C 817 818	CKSQYB103K25
C 820 821	CCSQCH180J50
C 823	CEAR47M50LL
C 824	CKSQYB103K25
C 825	CKSQYB103K25

Unit Number :CWM3593
Unit Name :Key Board Unit

MISCELLANEOUS

IC 901	PD6122A
Q 901 902	2SB1132
Q 903	DTC124EK
Q 904 905	2SC2712
D 901 902	MA153
D 904 LED	PRPY1201W
L 901 Inductor	LCTA100K4532
X 901	CSS1312
S 901 902 903 904 905 906 907 908 909 910	CSG1041
S 911 912 913 914 915 916 917 918 919 920	CSG1041

=====Circuit Symbol & No. Part Name=====	Part No.
S 921 922 Switch	CSG1041
IL 901 902 903 904 905 906 Lamp	CEL1297
IL 907 908 909 910 911 912 Lamp	CEL1295
LCD 901 LCD	CAW1248

RESISTORS

R 901 902 904 906	RS1/10S222J
R 905 907 932 933	RS1/10S302J
R 908 909 910 911 912 913 914 915 916 917	RS1/10S471J
R 918 919	RS1/10S471J
R 920	RS1/10S472J
R 922	RS1/10S473J
R 924 937 938	RS1/10S0R0J
R 925 927	RS1/10S223J
R 926 928	RS1/10S473J
R 929 931 934 935	RS1/8S152J

CAPACITORS

C 901 902 903	CKSQYB103K25
C 904	CSZSR100M6R3

Unit Number :CWM3618
Unit Name :Power Supply Filter Unit

MISCELLANEOUS

D 791 792 793 794	ERA15-02VH
L 791	CTH1103
EF 791	CCG1006

Unit Number :ENP1106
Unit Name :Mechanism P.C.Board

MISCELLANEOUS

S 1 2 Switch	CSN1022
EGN 1 2 Photo-Interrupter	NJL5181KA-F10
R 1	RD1/8HM271J
R 2	RD1/8HM681J

Miscellaneous Parts List

EGN 3 Photo-Interrupter	EGN1002
M 1 Motor Unit (MAIN)	EXA1278
M 2 Motor Unit (SUB)	EXA1334
HD 1 Head Assy	EXA1301

6.CASSETTE MECHANISM MODULE EXPLODED VIEW PARTS LIST

● **Parts List**

Mark	No.	Description	Part No
	1	Screw	BMZ20P060FMC
	2	Screw	BSZ20P040FMC
	3	Screw(M2x4)	CBA1015
	4	Washer	CBF1037
	5	Washer	CBF1038
	6	Washer	CBG1003
	7	Switch	CSN1022
	8	Deck Unit	CWM3113
	9	Spring	EBH1458
	10	Spring	EBH1434
	11	Spring	EBH1435
	12	Spring	EBH1437
	13	Spring	EBH1464
	14	Spring	EBH1439
	15	Spring	EBH1440
	16	Spring	EBH1441
	17	Spring	EBH1442
	18	Spring	EBH1443
	19	Spring	EBH1446
	20	·····	
	21	Spring	EBL1016
	22	Connector(CN252)	CKS2127
	23	Photo-Interrupter	EGN1002
	24	Roller	ELA1281
	25	Shaft	ELA1282
	26	Roller	ELA1283
	27	Cover	ENC1307
	28	Connector(CN251)	CKS1711
	29	Connector(CN253)	CKS2129
	30	Arm	ENC1310
	31	Arm	ENC1311
	32	Lever	ENC1312
	33	Holder	ENC1365
	34	Cover	ENC1372
	35	Lever	ENC1315
	36	Lever	ENC1353
	37	Bracket	ENC1317
	38	Arm	ENC1335
	39	P.C.Board	ENP1109
	40	P.C.Board	ENP1106
	41	P.C.Board	ENP1107
	42	Roller	ENR1023
	43	Belt	ENT1027
	44	Gear	ENV1346
	45	Gear	ENV1347
	46	Gear	ENV1348
	47	Collar	ENV1349
	48	Gear	ENV1350
	49	Gear	ENV1351
	50	Gear	ENV1354
	51	Gear	ENV1355
	52	Gear	ENV1357
	53	Gear	ENV1358
	54	Gear	ENV1359
	55	Clamper	ENV1360
	56	Clamper	ENV1361
	57	Arm	ENV1362
	58	Gear	ENV1363
	59	Flywheel	ENV1410
	60	Head Assy	EXA1301
	61	Arm Unit	EXA1276
	62	Arm Unit	EXA1277
	63	Motor Unit	EXA1278
	64	Motor Unit	EXA1334
	65	Head Base Unit	EXA1340
	66	Gear Unit	EXA1281
	67	Guide Unit	EXA1356
	68	Chassis Unit	EXA1339
	69	Pinch Roller Unit	EXA1284
	70	Pinch Roller Unit	EXA1285
	71	Reel Unit	EXA1306
	72	Arm Unit	EXA1338
	73	Sub Chassis Unit	EXA1312
	74	Arm Unit	EXA1289
	75	Spare Unit	EXA1293
	76	Screw	HBA-147
	77	Washer	HBF-179
	78	Screw	JGZ20P025FNI
	79	Screw	PMS20P022FUC
	80	·····	
	81	·····	
	82	Washer	YE15FUC
	83	Washer	YE20FUC
	84	Washer	YE25FUC
	85	Frame Unit	EXA1290
	86	Lever	ENC1308
	87	Lever	ENC1309
	88	·····	
	89	Spring	ELB1020
	90	Screw	JFZ17P025FNI

7.CHASSIS EXPLODED VIEW PATRS LIST

NOTES:

- Parts marked by "✱" are generally unavailable because they are not in our Master Spare Parts List.
- Parts marked by "◉" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

● **Parts List**

Mark No.	Description	Part No
1	Screw	BSZ26P050FMC
2	Screw	BSZ30P120FMC
3	Cord Assy	CDE4071
4	Fuse(10A)	CEK1136
5	·····	
6	Holder	CNC4962
7	Housing	CNV3636
8	Spring	CBH1566
9	Spring	CBH1567
10	Connector	CKS2732
11	Antenna Jack	CKX1043
12	Holder	CNC4880
13	Case	CNB1755
14	Holder	CNC4946
15	Shield Plate	CNC5129
16	Tape	CNM3891
17	·····	
18	Spring	CBH1477
19	Connector(CN901)	CKS2733
20	Case	CNS2269
21	·····	
22	·····	
23	·····	
24	Screw	CBA1271
25	·····	
26	·····	
27	·····	
28	·····	
29	·····	
30	·····	
31	·····	
32	·····	
33	·····	
34	·····	
35	Connector	CNV3633
36	·····	
37	Lens	CNV3630
38	·····	
39	·····	
40	Heat Sink	CNR1308
41	Cap	CNS1472
42	Resistor	RS1/2P102JL
◉ 43	Cassette Mechanism Module	EXK1910
44	Panel Unit	CXA6085
45	Door	CAT1558
46	Spring	CBH1371
47	LCD	CAW1248
48	·····	
49	Screw	CBA1284
50	Cushion	CNM3476
51	Holder	CNC4970
52	P.C.Board	CNP3697
53	Arm	CNV3637
54	Arm	CNV3654
55	Arm	CNV3655
56	Holder Unit	CXA5779
57	Handle	CNC4947
58	Cushion	CNM3949
59	Bush	CNV1009
60	Screw	BSZ30P050FMC
61	Screw	BSZ30P055FUC
62	Screw	CBA1215
63	Holder	CNC4963
64	Insulator	CNM3737
65	Tuner Amp Unit	CWM3581
66	Chassis Unit	CXA5787
67	Holder	CNC4956
68	IC(551)	PA3029A
69	Screw	BSZ30P100FMC
70	Detach Grille Assy	CXA5651
71	Screw	BPZ20P080FMC
72	Cord	CDE3847
73	IC(IC704)	PA2023A
74	Screw	BSZ30P060FMC
75	·····	
76	Holder	CNC4959
77	Holder	CNC4882
78	Antenna Cable	CDH1187
79	Plug(CN641)	CKS1224
80	Connector(CN704)	CKS1730

Mark	No.	Description	Part No
	81	·····	
	82	Connector(CN703)	CKS2239
	83	Connector(CN702)	CKS2480
	84	Holder	CNC2218
	85	FM/AM Tuner Unit	CWE1313
	86	Holder	CNC4958
	87	Holder	CNC4961
	88	Power Supply Filter Unit	CWM3618
	89	Screw	BPZ20P120FZK
	90	Button	CAC3675
	91	Button	CAC3676
	92	Button	CAC3692
	93	Button	CAC3693
	94	Button	CAC3694
	95	Button	CAC3695
	96	Button	CAC3696
	97	Button	CAC3697
	98	Spring	CBH1623
	99	Cushion	CNM3727
	100	Cover	CNS2758

Mark	No.	Description	Part No
	101	Lens	CNV3631
	102	Lens	CNV3632
	103	Key Board Unit	CWM3591
	104	Grille Unit	CXA5809
*	105	Panel	CNS2761
	106	Plug(CN792)	CKM1057
	107	Plug(CN791)	CKS1624
	108	Button Unit	CXA6162
	109	Holder	CNC4957
	110	Insulator	CNM3634
	111	Button Unit	CXA6163
	112	Insulator	CNM3825

8.PACKING METHOD

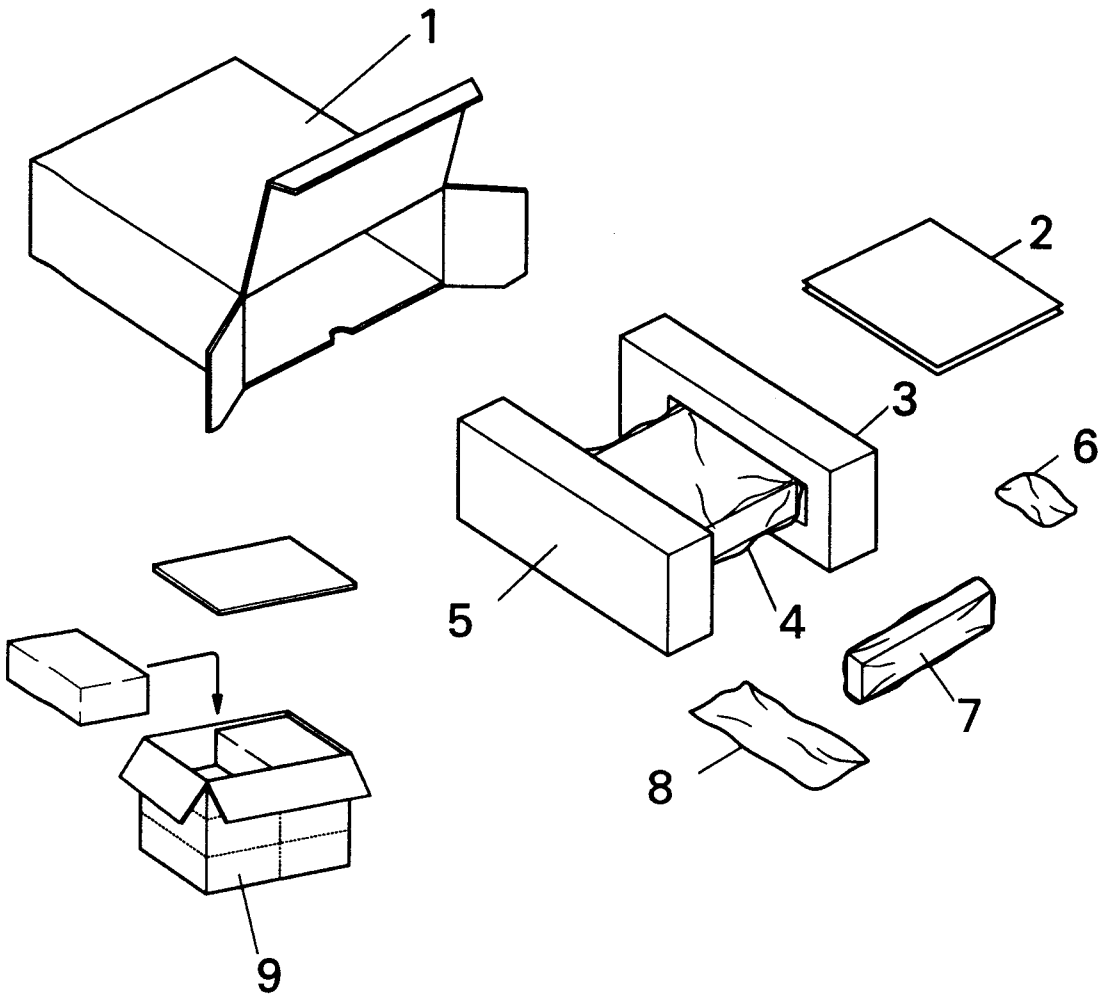


Fig.15

● **Parts List** *:Non spare Parts

Mark	No.	Description	Part No
	1	Carton	CHG2382
	2-1	Owner's Manual	CRD1679
	2-2	Owner's Manual(EW)	CRD1680
	2-3	Installation Manual	CRD1681
*	2-4	Card(EW)	CRY-062
*		Card(X1B)	URY-001
*	2-5	Passport(EW)	CRY1013
*		Passport(X1B)	CRY1014
	3	Protector	CHP1606
	4	Cover(EW)	CEG1092
*		Polyethylene Bag(X1B)	UEG-002

Mark	No.	Description	Part No
	5	Protector	CHP1607
	6	Accessory Assy	CEA1917
	7	Case	CNS2269
	8	Cord Assy	CDE4071
	9	Contain Box(EW)	CHL2382
		Contain Box(X1B)	UHD-002

●Owner's Manual
Installation Manual

Part No.	Language
CRD1679	English,French,German,Spanish,Italian,Dutch
CRD1680	Swedish,Norwegian,Finnish
CRD1681	English,French,German,Spanish,Italian,Dutch, Swedish,Norwegian,Finnish,Portuguese

●Accessory Assy

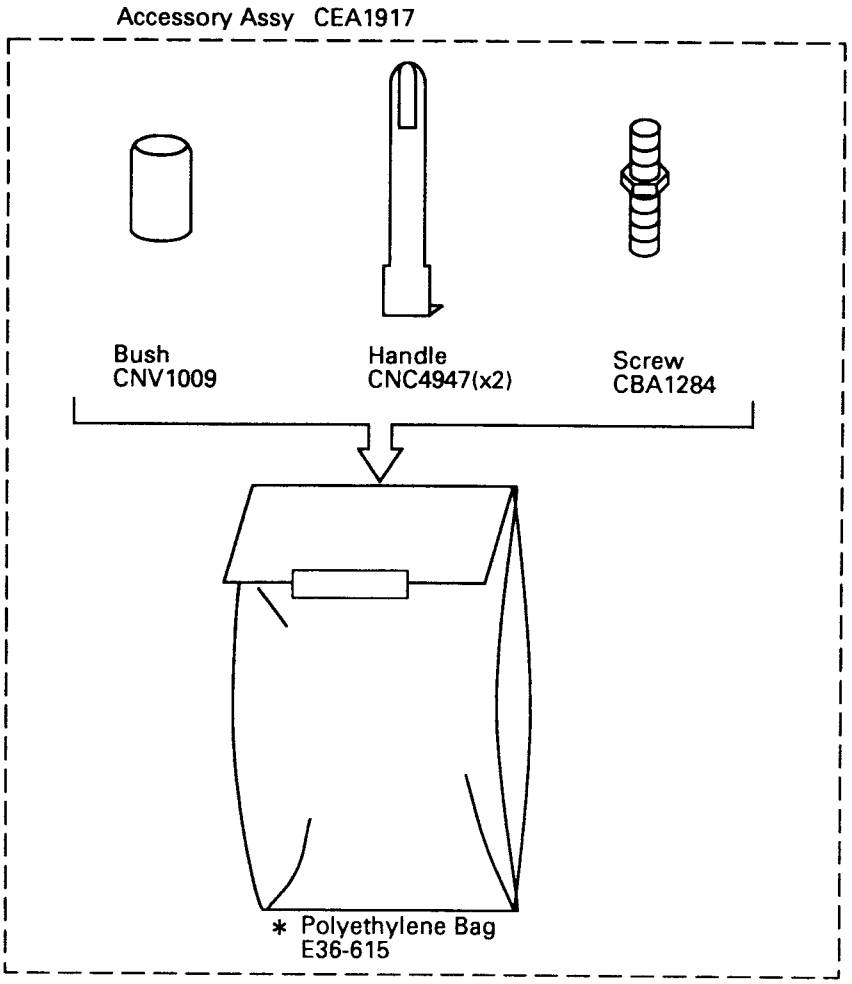


Fig.16

CHAPTER 2

1. CHASSIS EXPLODED VIEW

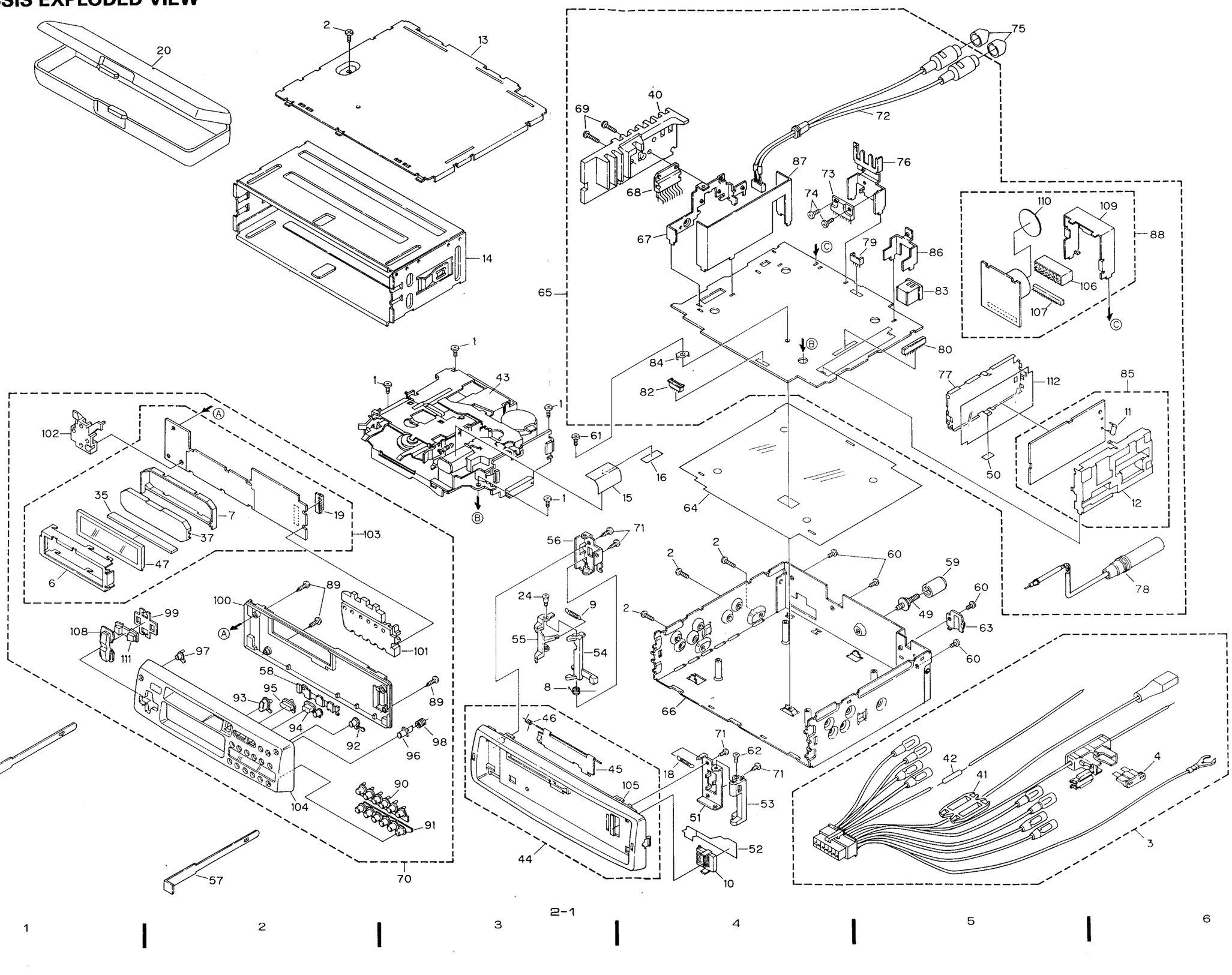


Fig.1

2. CASSETTE MECHANISM MODULE EXPLODED VIEW

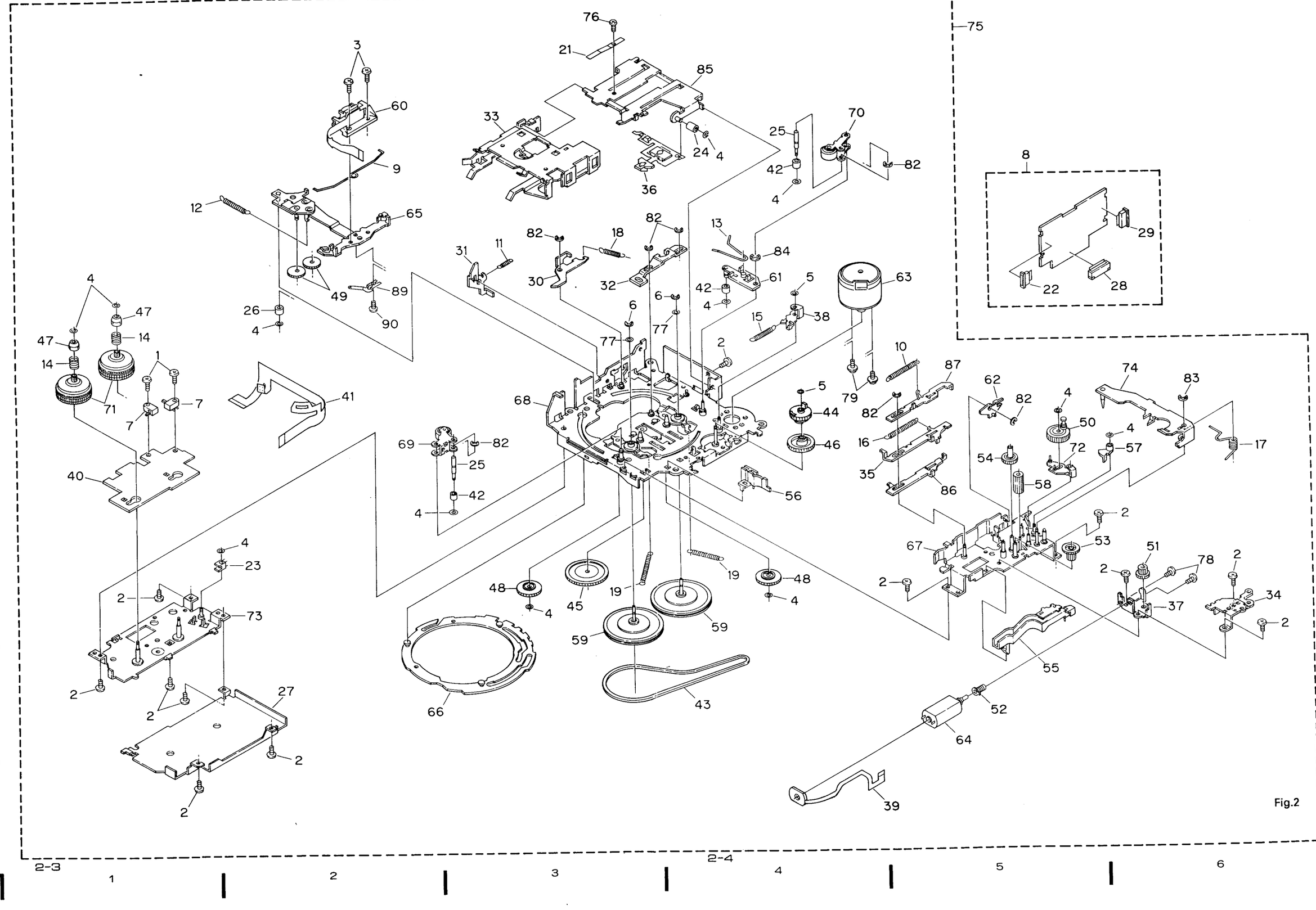


Fig.2

3. BLOCK DIAGRAM

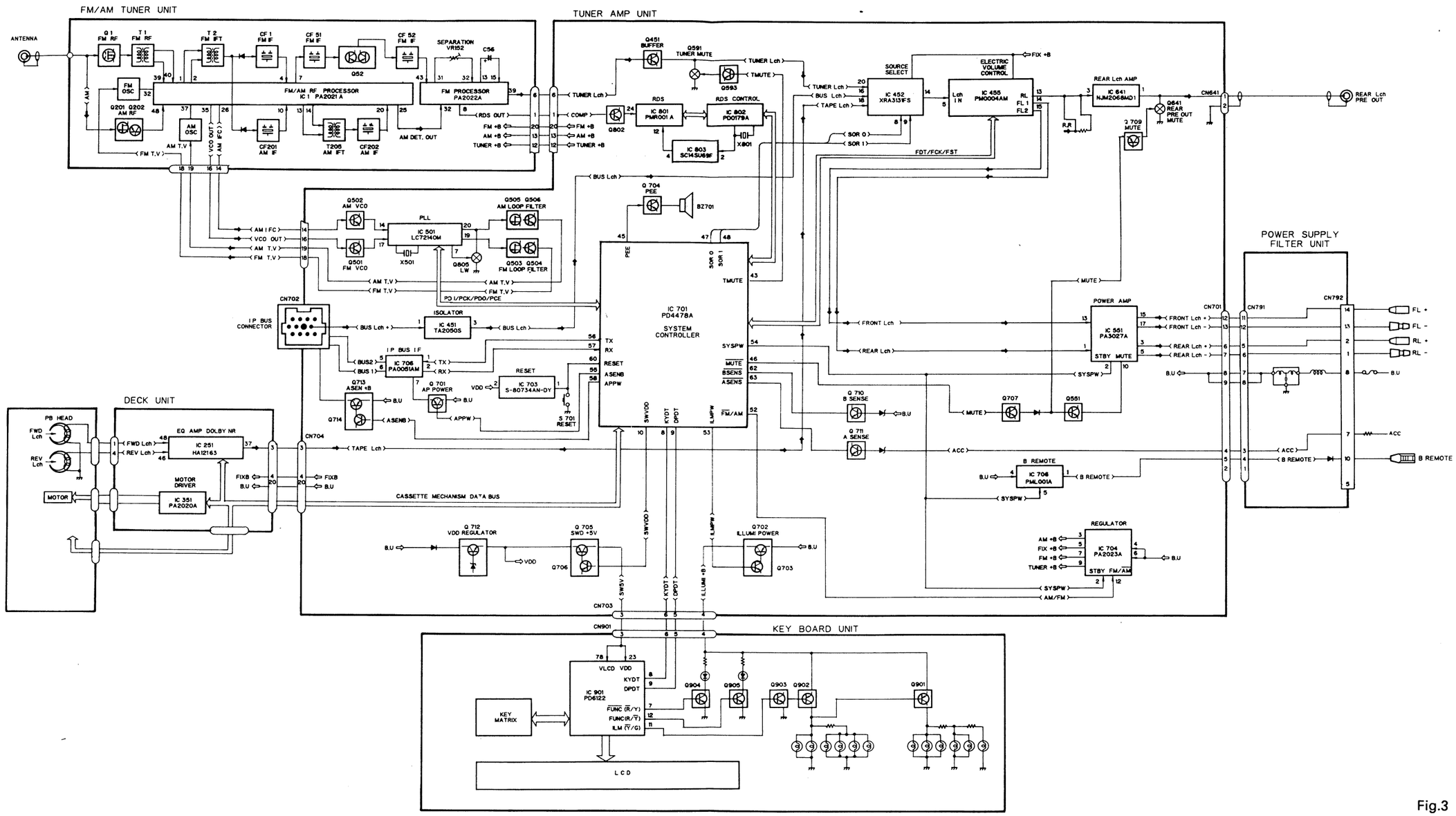


Fig.3

4. CONNECTION DIAGRAM

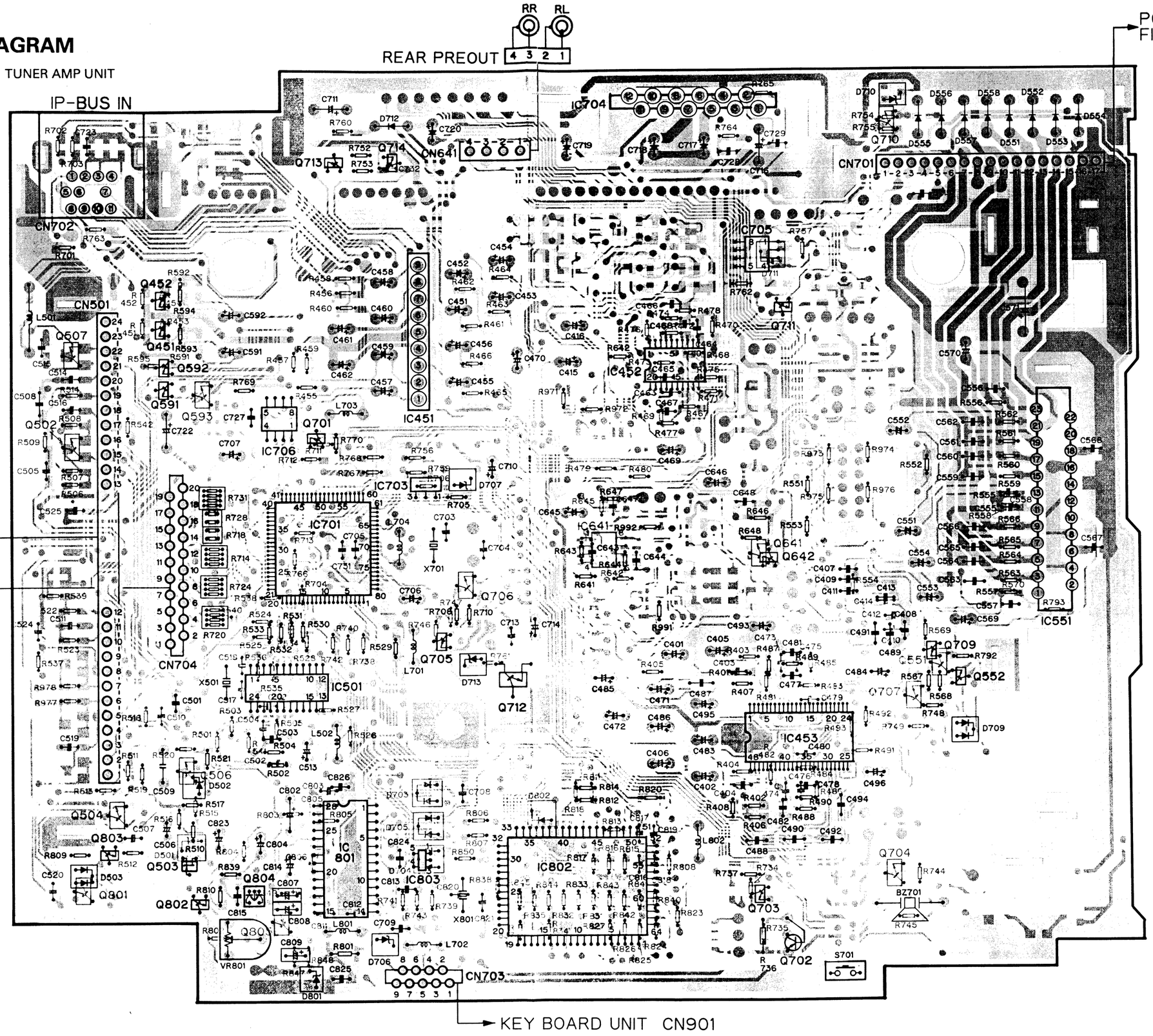


Fig.4

5. SCHEMATIC CIRCUIT DIAGRAM

TUNER AMP UNIT

FM/AM TUNER UNIT

TUNER -12dBs (FM)

TAPE: -11.2dBs

PLL CONTROL

RDS DECODE

ISOLATOR

IC451 TA2050S

IP BUS DRIVER

IC701 PD4478A

SYSTEM CONTROL

IC801 PMR001A

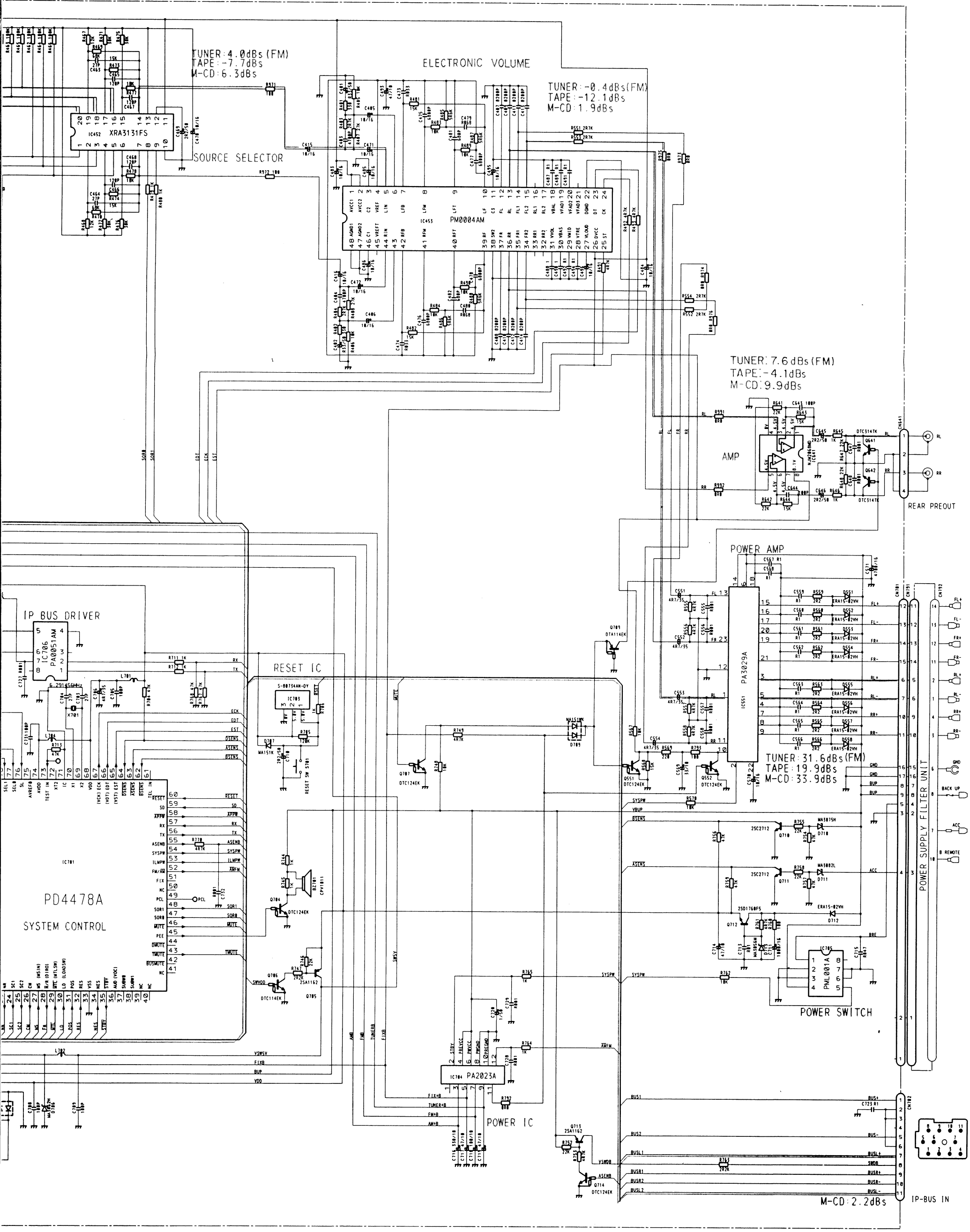
IC802 PD0191A

RDS MICRO-COMPUTER

CASSETTE MECHANISM MODULE

KEY BOARD UNIT

NOTE:



NOTE :

- Symbol indicates a resistor. No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor. No differentiation is made between chip capacitors and discrete capacitors.

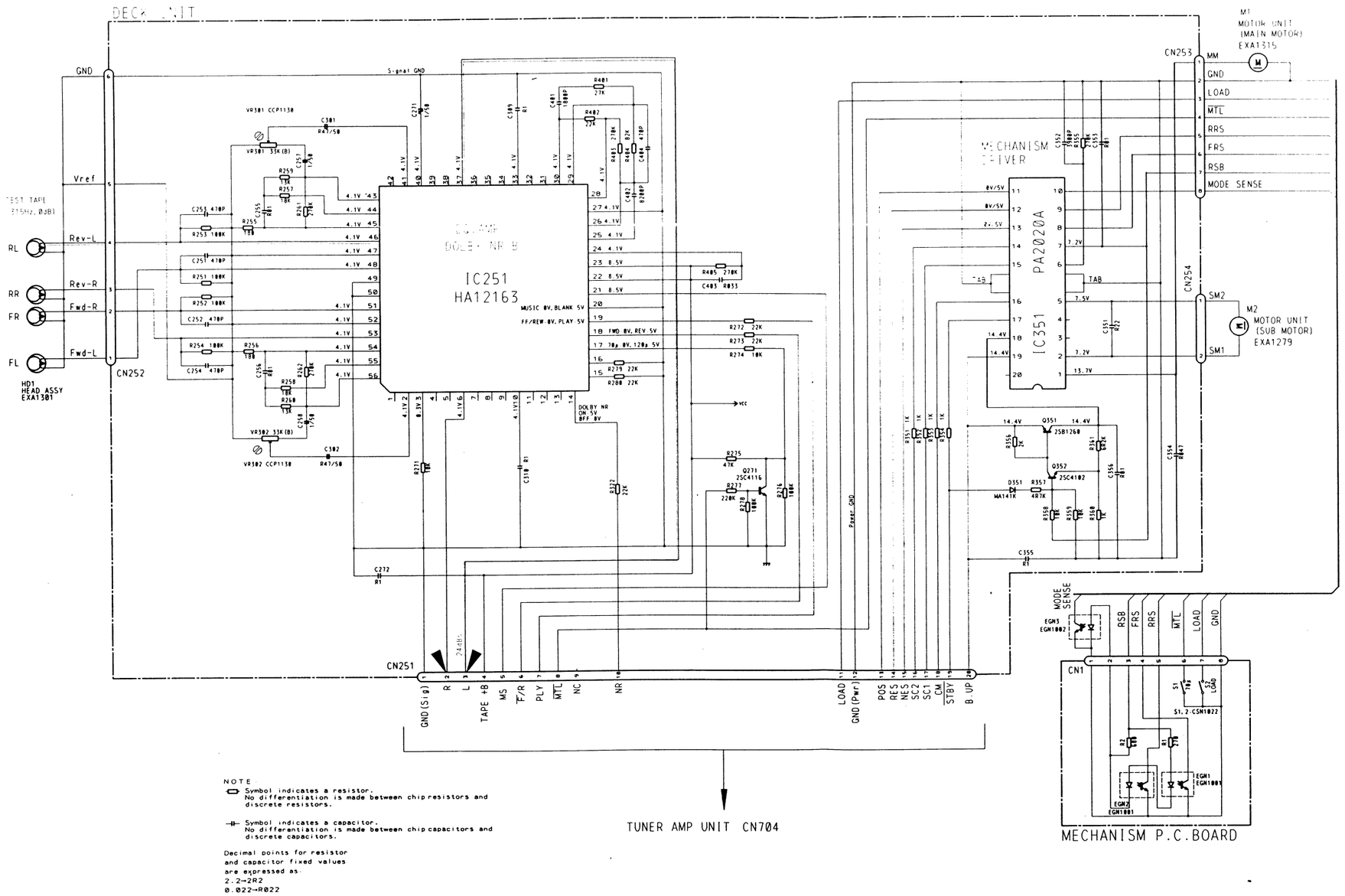
Decimal points for resistor and capacitor fixed values are expressed as:
2.2→2R2
0.022→R022

F

6. CIRCUIT DIAGRAM AND PATTERN

6.1 CASSETTE MECHANISM MODULE

●Circuit Diagram

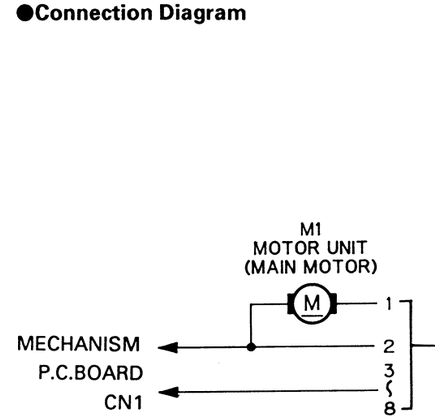


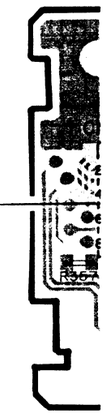
NOTE

- Symbol indicates a resistor. No differentiation is made between chip resistors and discrete resistors.
- Symbol indicates a capacitor. No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as.
2.2→2R2
0.022→R022

●Connection Diagram





DECK U

IC. Q

ADJ

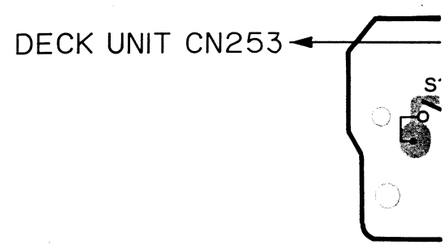


Fig. 6

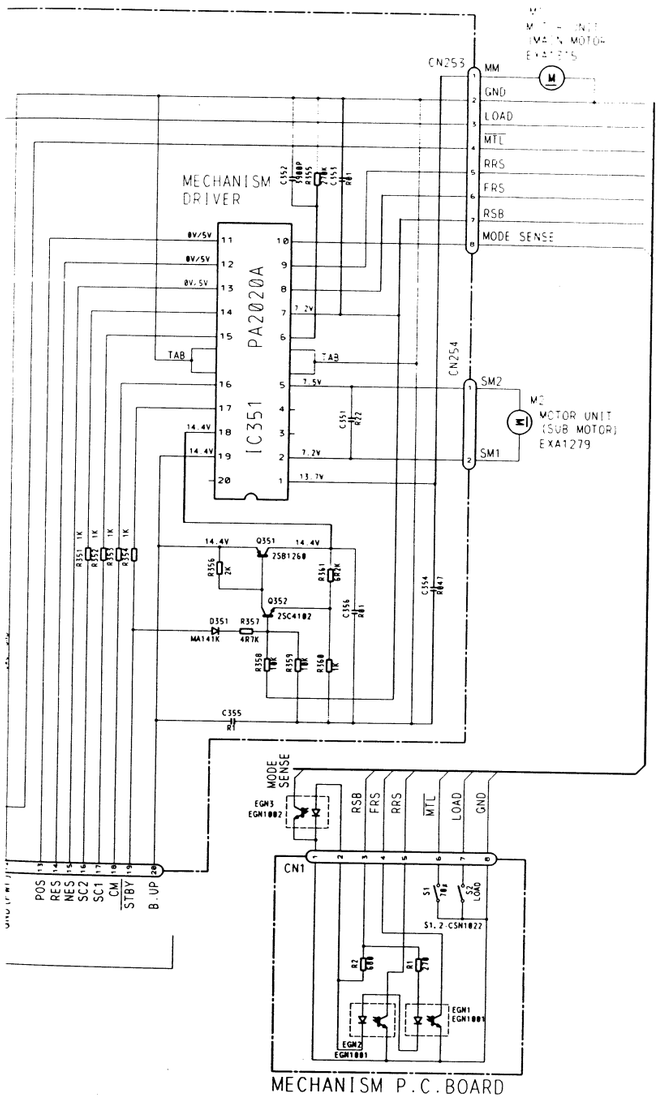
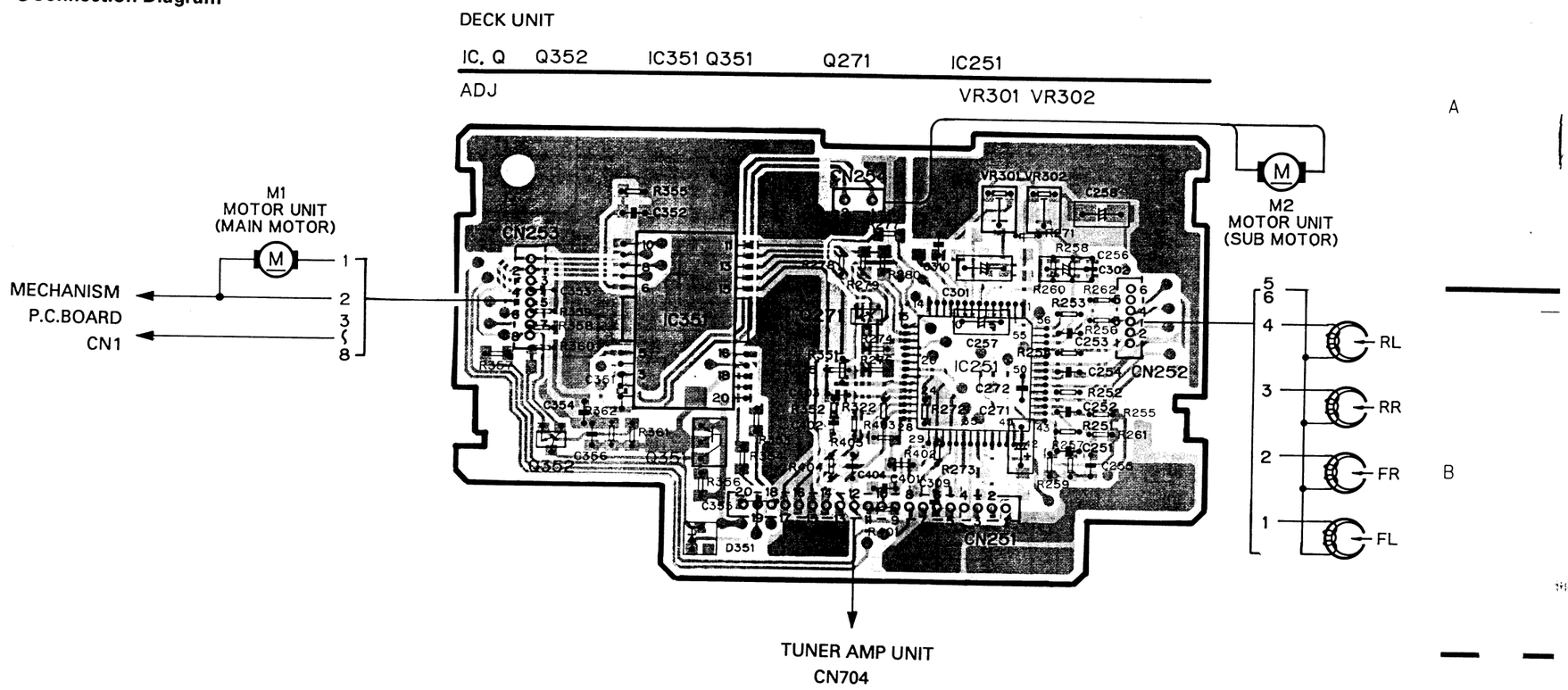


Fig. 6

●Connection Diagram



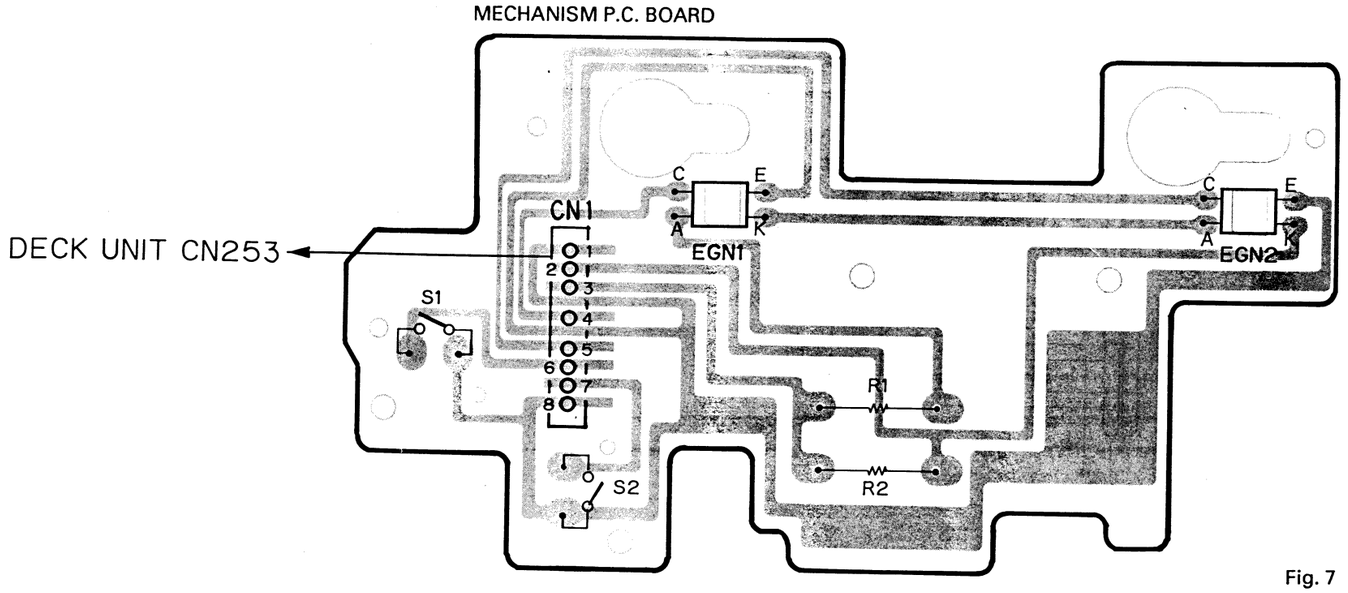


Fig. 7

6.2 FM/AM TUNER UNIT

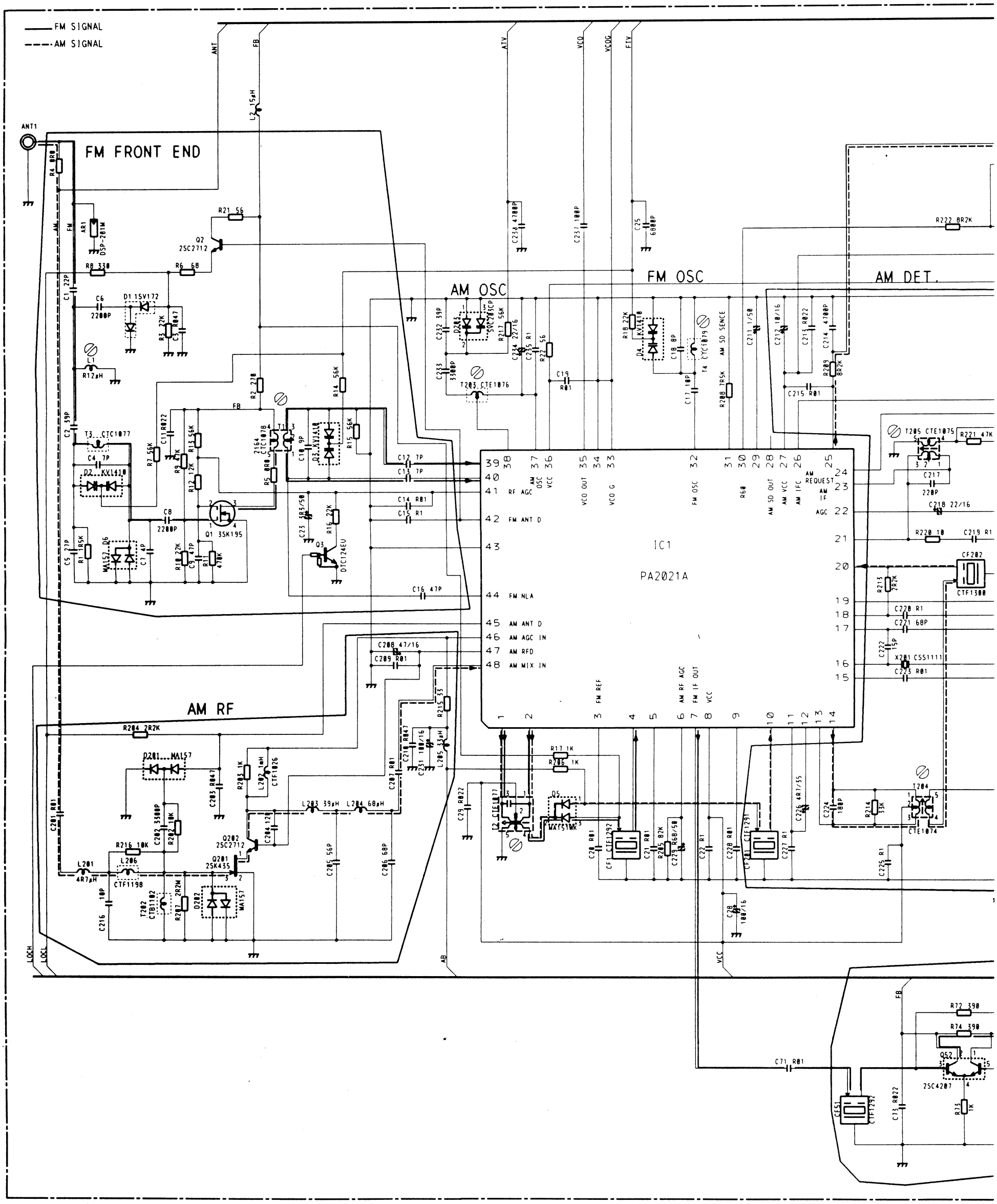
●Circuit Diagram

NOTE

Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.

Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as.
2.2→2R2
0.022→R022



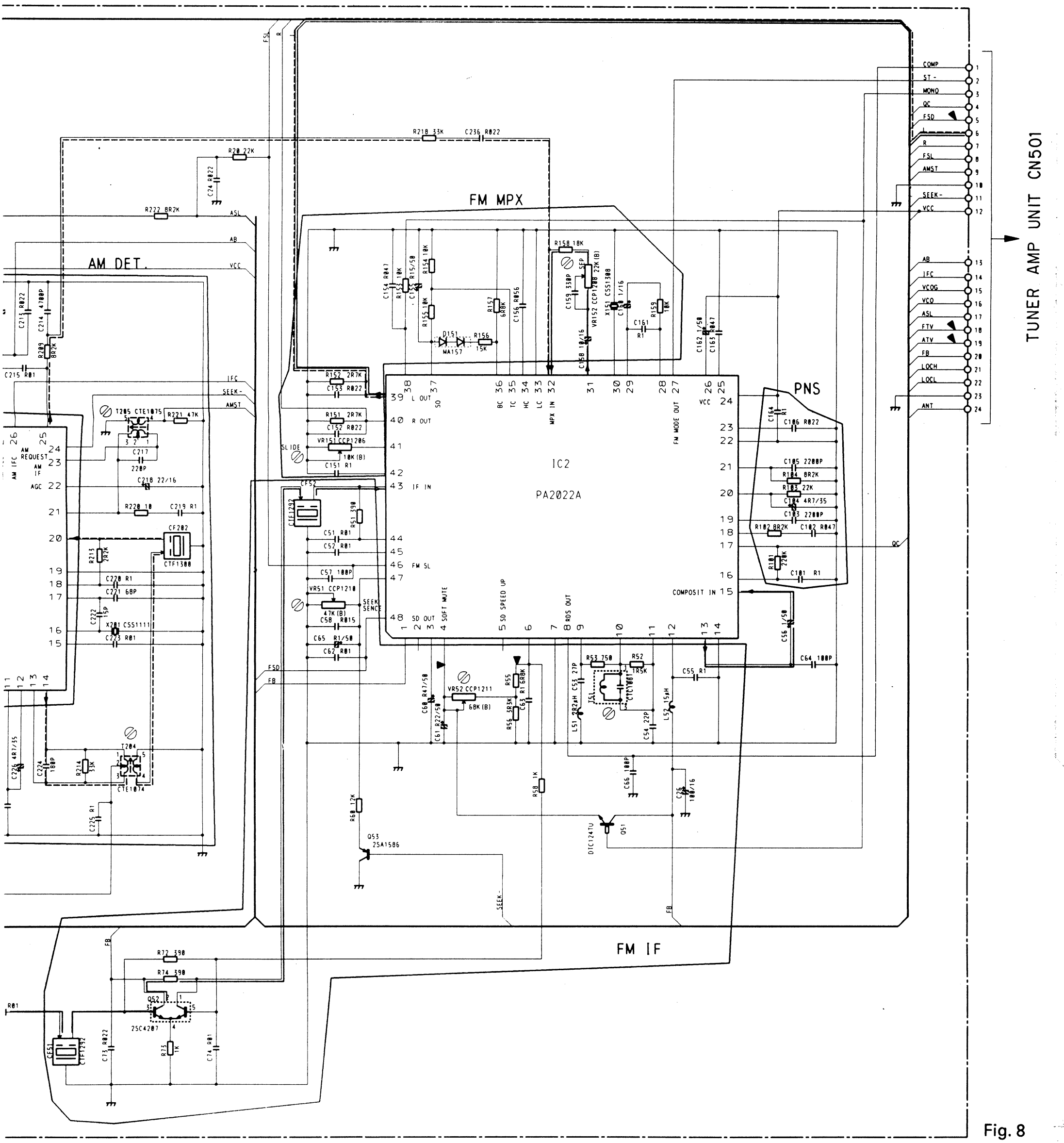
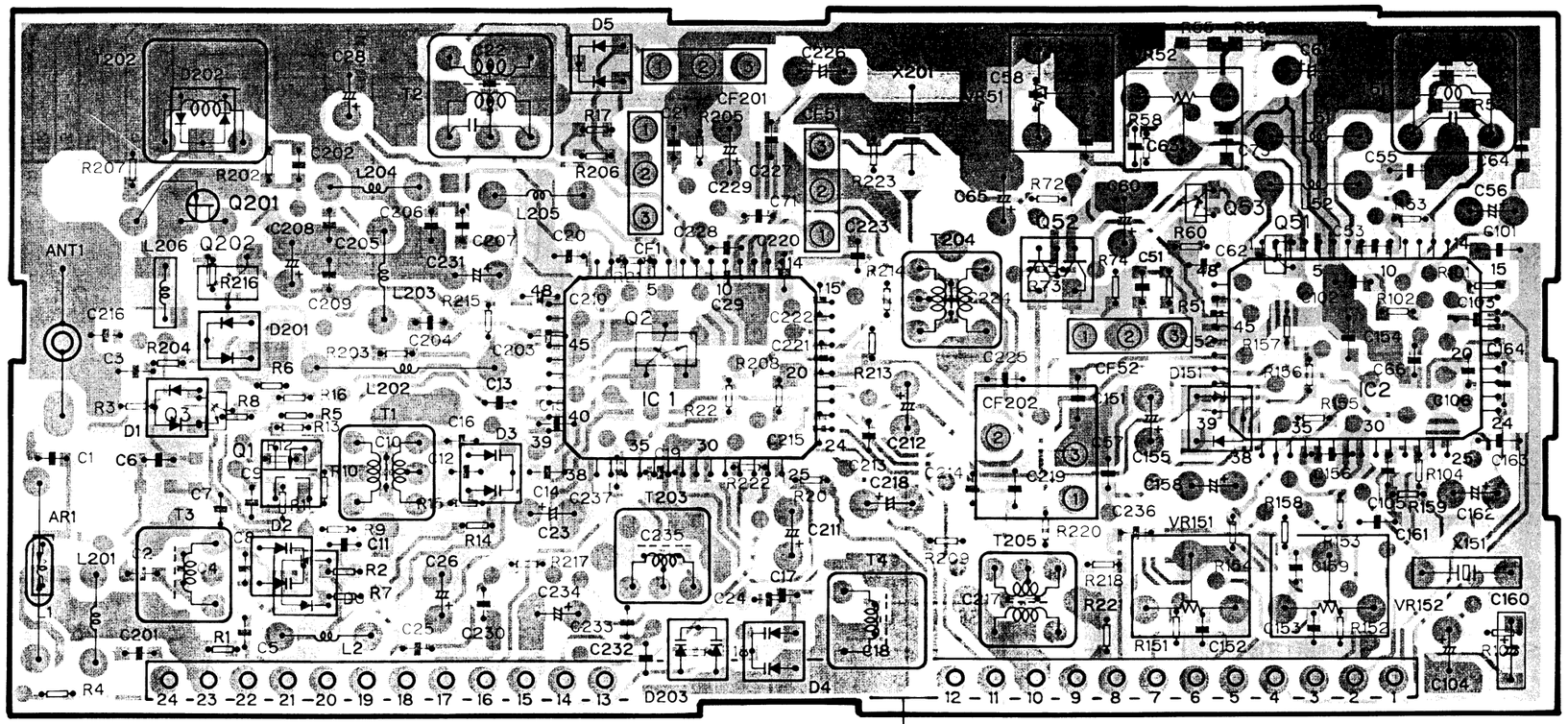

TUNER AMP UNIT CN501
COMP
ST -
MONO
QC
FSD
R
FSL
AMST
SEEK-
VCC
AB
IFC
VCOG
VCO
ASL
FTV
ATV
FB
LOCH
LOCL
ANT
FM MPX
PNS
IC2
PA2022A
AM DET.
FM IF
AM REQUEST
AM IF
AGC
SLIDE
SEEK SENCE
FSD
FB
SEEK-
QC
R218 33K
C236 R022
R20 22K
C24 R022
R222 8R2K
ASL
AB
VCC
IFC
SEEK-
AMST
R158 18K
C159 330P
VR152 CCP1208 22K(B)
X151 CSS1308
C160 1/16
R159 18K
C161 R1
C162 1/50
C163 R047
C154 R047
R153 10K
C155 R15/50
R154 10K
R155 10K
R157 68K
C156 R056
D151 MA157
R156 15K
C158 10/16
R152 2R7K
C153 R022
R151 2R7K
C152 R022
VR151 CCP1206
10K(B)
C151 R1
R221 47K
T205 CTE1075
C217 220P
C218 22/16
R220 10
C219 R1
CF202 CTF1388
R213 2R2K
C220 R1
C221 68P
C222 15P
X201 CSS1111
C223 R01
C215 R01
R209 8R2K
C213 R022
C214 4700P
CF52 CTF1292
R51 390
C51 R01
C52 R01
C57 100P
VRS1 CCP1210
47K(B)
C58 R015
C65 R1/50
C62 R01
VR52 CCP1211
68K(B)
C60 R47/50
C61 R22/50
R55 R1 68K
C63 R56 3R3K
R53 750
R52 1R5K
C53 27P
L51 2R2uH
C54 22P
L52 15uH
C55 R1
C56 1/50
C64 100P
C66 100P
R58 1K
C25 100/16
R60 12K
Q53 2SA1586
DTC124TU
Q51
R72 390
R74 390
Q52 2SC4207
R01
CES1 CTF1292
C73 R022
R73 1K
C74 R01
T204 CTE1074
C226 4R7/35
C224 180P
R214 33K
C225 R1
C164 R1
C106 R022
C105 2200P
R104 8R2K
R103 22K
C104 4R7/35
C103 2200P
R102 8R2K
C102 R047
R101 220K
C101 R1
1 SD OUT
2
3
4 SOFT MUTE
5 SD SPEED UP
6
7
8 ROS OUT
9
10
11
12
13
14
15 COMPOSIT IN
16
17
18
19
20
21
22
23
24 VCC
25
26
27 FM MODE OUT
28
29
30
31
32 MPX IN
33 HC
34 TC
35 BC
36
37 SO
38 L OUT
39
40 R OUT
41
42
43 IF IN
44
45
46 FM SL
47
48 SD OUT

Fig. 8

●Connection Diagram

IC, Q	Q201	Q3	Q202	Q1			Q2	IC1			Q52		Q53	Q51	IC2		
ADJ		T3			T1	T2					T4	T204	T205	VR51	VR52	VR151	VR152	T51



TUNER AMP UNIT CN501

Fig. 9

6.3 KEY BOARD UNIT ●Circuit Diagram

KEY BOARD UNIT

LCD901
CAW1248
LCD

TUNER AMP UNIT
CN703

CN901
GND
ILMG
KYDT
DPDT
ILL+B
VDD
DSENS

L901
R901 2R2K
R902 2R2K

D901 MA153
D902 MA153
CEL1295*6

2SB1132
Q901
R904 2R2K
R933 3K
R935 3K
R924 0R0
Q902 2SB1132
R906 2R2K
R932 3K
R907 3K
Q903 DTC124EK

IL908
IL909
CEL1297*6
IL901
IL918
IL902
IL903
IL904
IL911
IL912
IL905
IL906
IL907
R937 0R0
R938 0R0

R934 152
R929 152
R935 152
R931 152

D904
PRPY1201W

2SC2712
Q904
R925 22K
R926 47K
2SC2712
Q905
R927 22K
R928 47K

CSG1041*22
CH1 S901
CH2 S907
CH3 S913
CLOCK S919
CH4 S902
CH5 S908
CH6 S914
SELECT S920
CH7 S903
CH8 S909
CH9 S915
EJECT S921
CH10 S904
CH11 S910
CH12 S916
BAND S922
SEEK+ S905
SEEK- S911
SOURCE S917
VOL+ S906
VOL- S912
SHIFT S918

R908 471
R909 470
R910 470
R911 470
R912 470
R913 470
R914 470
R915 470
R916 470
R917 470

X901 4.97MHz
R918 470
R919 470

C901 R01
C902 R01
C903 R01

IC901
PD6122
LCD DRIVER

1 VSS
2 X1
3 X0
4
5 MOD1
6 MOD0
7 FUNC(R/Y)
8 KYDT
9 DPDT
10 REMIN
11 ILM(Y/G)
12 FUNC(R/Y)
13 KD4
14 KD3
15 KD2
16 KD1
17 KST6
18 KST5
19 KST4
20 KST3

21 KST2
22 KST1
23 VDD
24 NO OPE
25 NO OPE
26 NO OPE
27 NO OPE
28 NO OPE
29 NO OPE
30 NO OPE
31 NO OPE
32
33
34
35
36 SEG38
37 SEG37
38 SEG36
39 SEG35
40 SEG34
41 SEG33
42 SEG32
43 SEG31
44 SEG30
45 SEG29
46 SEG28
47 SEG27
48 SEG26
49 SEG25
50 SEG24
51 SEG23
52 SEG22
53 SEG21
54 SEG20
55 SEG19
56 SEG18
57 SEG17
58 SEG16
59 SEG15
60 SEG14
61 SEG13
62 SEG12
63 SEG11
64 SEG10
65 SEG9
66 SEG8
67 SEG7
68 SEG6
69 SEG5
70 SEG4
71 SEG3
72 SEG2
73 SEG1
74 SEG0
75 COM0
76 COM1
77 COM2
78 COM3
79 V2
80 V1

LCD901 CAW1248 pins:
1 SEG0 2 SEG1 3 SEG2 4 SEG3 5 SEG4 6 SEG5 7 SEG6 8 SEG7 9 SEG8 10 SEG9 11 SEG10 12 SEG11 13 SEG12 14 SEG13 15 SEG14 16 SEG15 17 SEG16 18 SEG17 19 SEG18 20 SEG19 21 SEG20 22 SEG21 23 SEG22 24 SEG23 25 SEG24 26 SEG25 27 SEG26 28 SEG27 29 SEG28 30 SEG29 31 SEG30 32 SEG31 33 SEG32 34 SEG33 35 SEG34 36 SEG35 37 SEG36 38 SEG37 39 SEG38 40 COM0 41 COM1 42 COM2 43 COM3

R922 47K
C904 0.068
R920 4R7K

KYDT
DPDT
VDD

TUNER /
U
CN

Fig. 10

●Connection Diagram

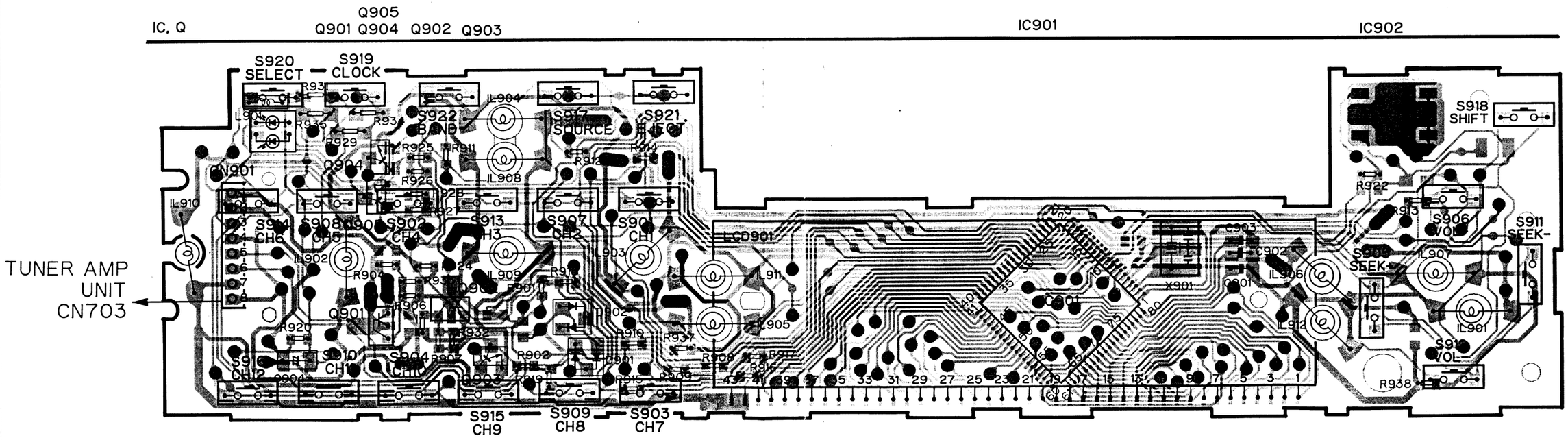


Fig.11

Fig. 10

6.4 POWER SUPPLY FILTER UNIT

●Circuit Diagram

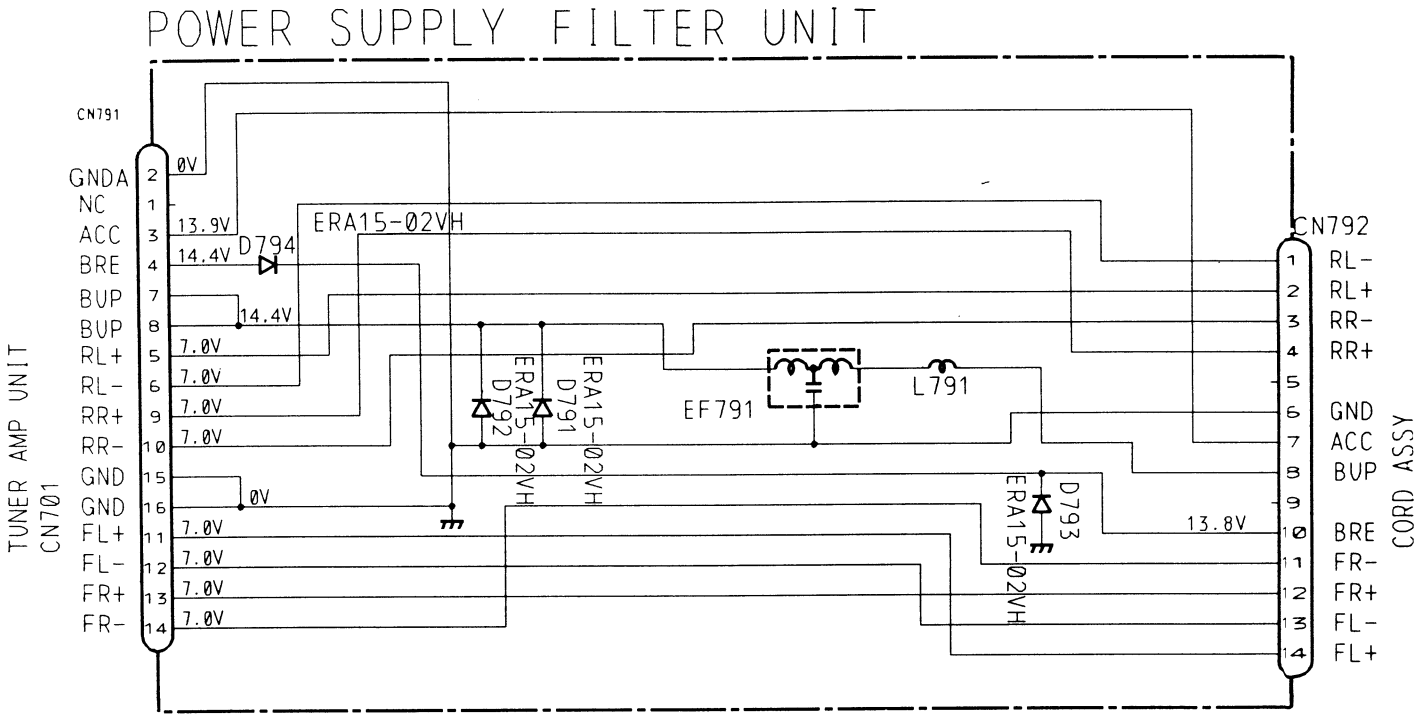


Fig.12

●Connection Diagram

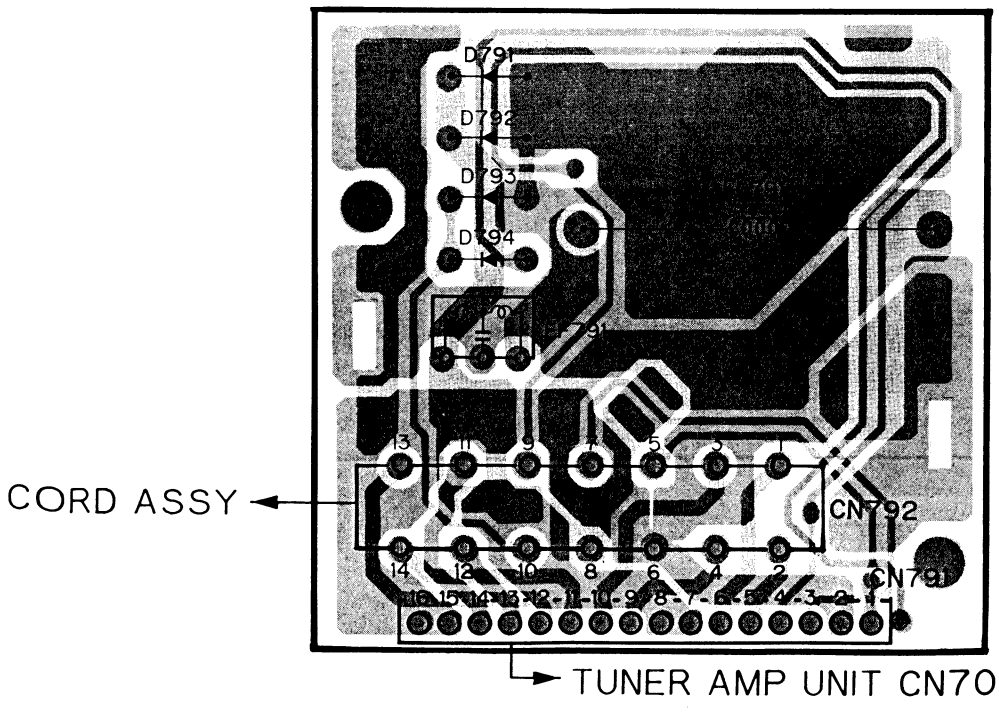


Fig.13